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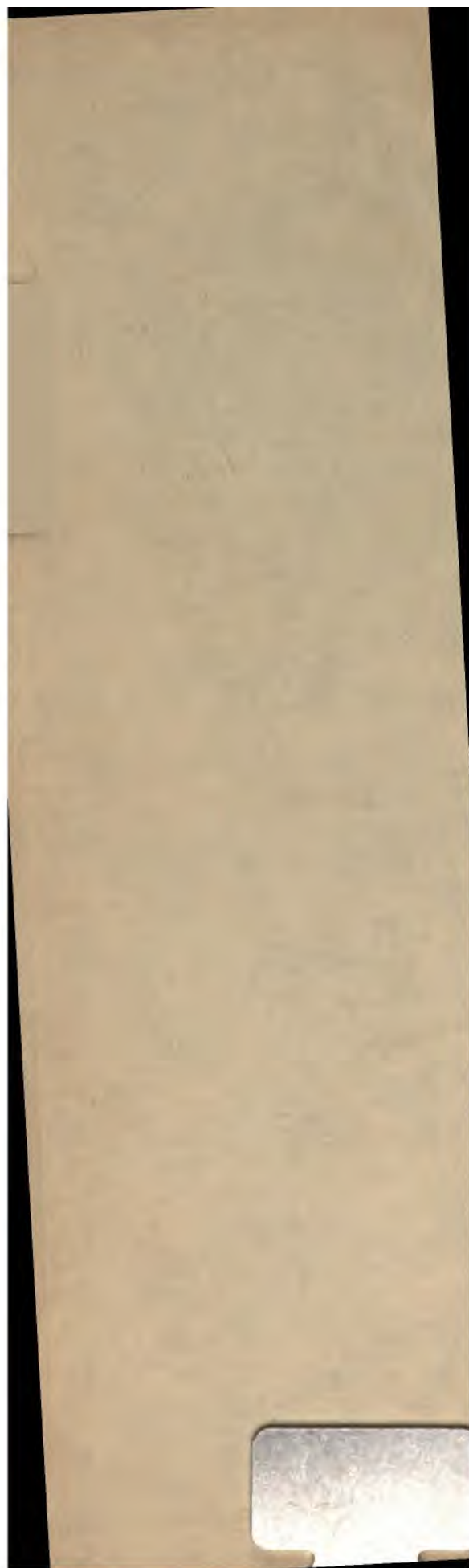
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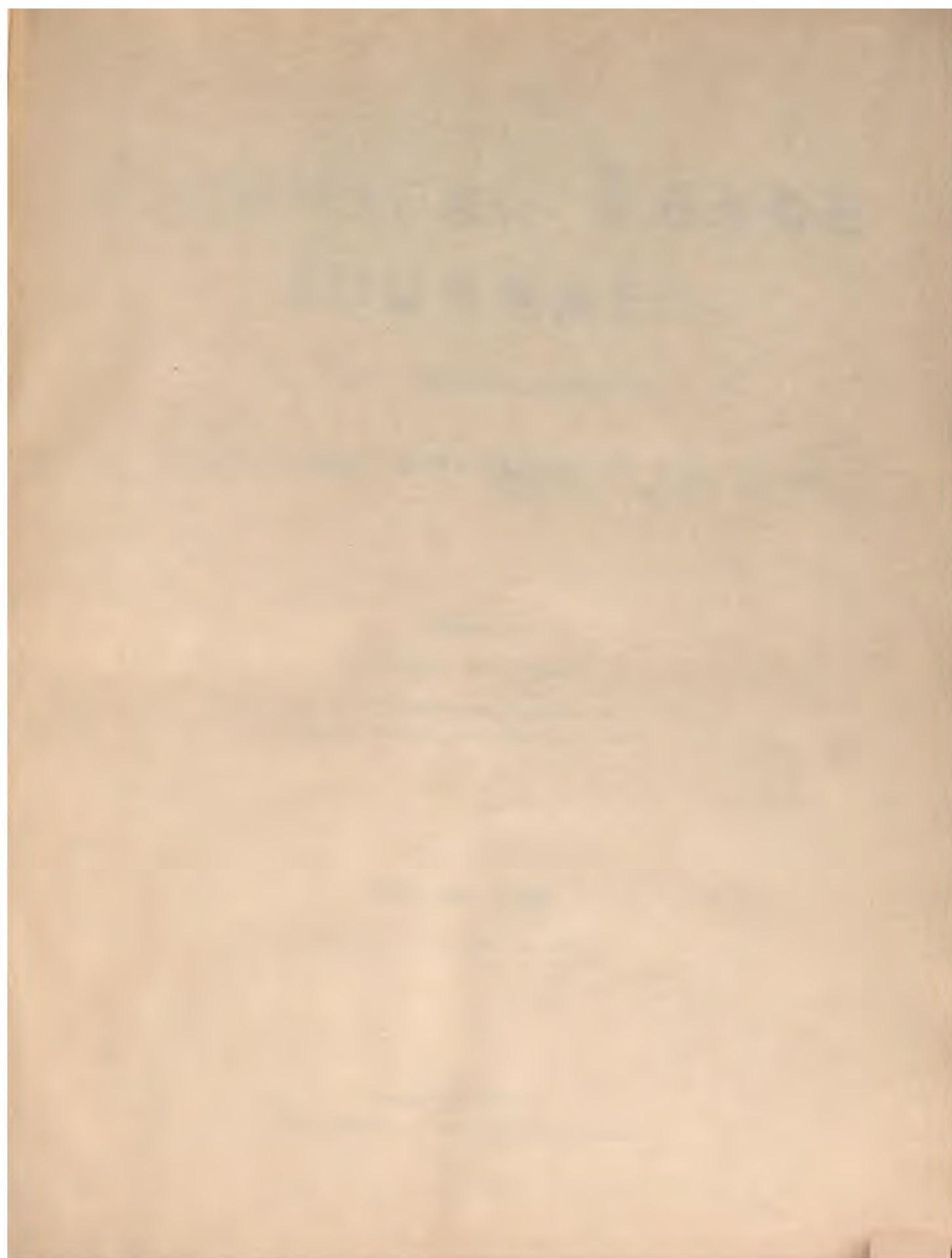


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Chemical Trade Journal  
Supplement, July 25, 1896

THE  
CHEMICAL TRADE  
JOURNAL:

A WEEKLY NEWSPAPER DEVOTED TO

*The Commercial Aspect of the Chemical and Allied Industries.*

EDITED BY

*GEORGE E. DAVIS,*

FORMERLY ONE OF HER MAJESTY'S INSPECTORS OF ALKALI WORKS.  
CHEMICAL ENGINEER AND CONSULTING CHEMIST.

VOLUME XVIII.

[JANUARY TO JUNE, 1896.]

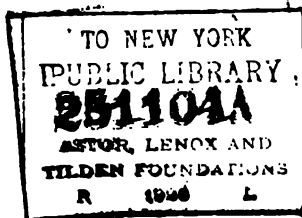
MANCHESTER:

DAVIS BROS., 32, BLACKFRIARS STREET.

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1896.

**251104A**



MANCHESTER:

PRINTED BY DAVIS BROS., 32, BLACKFRIARS STREET.

# THE CHEMICAL TRADE JOURNAL AND OIL, PAINT and COLOUR REVIEW.

Publishing Offices: 32, BLACKFRIARS STREET, MANCHESTER.

No. 450.

SATURDAY, JANUARY 4, 1895.

Vol. XVIII.

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## THE PAST, PRESENT, AND FUTURE.

CONCERNING the first section of our heading the year which has just closed does not lend itself to favourable comment, and it is somewhat difficult to act up to the time-honoured custom of saying nothing but good of the defunct. If we had to write its epitaph we should be disposed to say that, "Born without promise, it deserted its friends in youth, betrayed its colleagues in manhood, and would have died unmourned had it not been for the tardy reparation of its old age." It is, however, something to be able to chronicle a change for the better at the close of a year, otherwise so hope-shorn and depleted. As regards

### THE ALKALI TRADE,

the year 1895 has not been an uneventful one. We are glad to be able to say that the largest makers have come round to the line of policy which we urged upon them in our first issue of the past year, and having buried the hatchet, and re-charged the calumet of peace, are prepared to divide in amity a trade which, under the happiest circumstances, is none too large for the requirements of the dividend-loving shareholder. The moderation of the combine in fixing the price of ammonia soda ash at £3. 7s. 6d. in bags at works is to be highly commended. We do not say the market could not bear a higher figure, but wisdom counsels very cautious advances in this direction. It is a matter for regret that both bleach and caustic have failed to hold their own, and in both cases the outlook is rendered dubious by electrolysis. The glowing accounts which the chairman of the Electro Chemical Company recently gave to his shareholders of the company's successful working may perhaps be taken *cum grano salis*, but the problem of electrolytic production can scarcely be wisely treated as one that cannot be solved. The Castner-Kellner Company and Mr. Hargreaves, of Widnes have also to be reckoned with before a forecast of the future can be worth anything, and, instead of prophesying, we prefer to wait events. It is said that the nitric acid bleach plant, in course of erection at Middlesbrough, will not be ready quite so soon as was anticipated, and it is further rumoured that the difficulties of delay are not the only ones with which those interested have to contend. A very notable feature has been the recent rise in the price of salt cake, which comes as an antidote to the decline in bleach. The commonsense of the trade awoke to the fact that there was absolutely no reason why salt cake should be given away for 12s. per ton, and a cool survey of the position soon led to a happier state of things. We must not omit to record the acquisition by Messrs. Brunner, Mond and Co. of new alkali works on the Tees, and at Middlesbrough for the inauguration of their new plant for making caustic soda from soda ash by calcination with oxide of iron.



## TAR AND AMMONIA PRODUCTS.

In reviewing this industry it has previously been necessary to deplore the condition of the tar products, and to seek consolation in the position of sulphate of ammonia. It will be seen, however, on looking at the progress during the past year, that the positions have been reversed. Benzols, though they opened rather badly, improved as the year progressed, and are now decidedly strong, fetching good prices for both 90's and 50/90's. It would be a difficult matter to state exactly how far these improvements are due to the efforts of the Tar Products Syndicate. Undoubtedly, their work during the past two years has not been wasted, though, of course, much has depended on the better outlook which has been created by the more extended use of benzol for gas enrichment and kindred purposes. The attempt at a combine in Germany, if not finally carried out upon the exact lines which characterised its inception, has undoubtedly been productive of good rather than the reverse. Carbolic Acids have been fairly steady, particularly 60% crude. There was little fluctuation in the price during the earlier months of the year, and this steadiness, with the close of 1895, gave place to an advance, particularly for crude, while crystals have followed suit in a proportionate degree. Naphthas, on the whole, have been slow, and there would have been little to say had it not been for the sudden advance which took place in December. The relative values of naphtha and benzol have been somewhat anomalous, and their peculiar position seems to have at last demanded attention, if we may judge by the correspondence which has appeared in those journals which deal prominently with the weekly prices of these products. Whether the outcome of the correspondence will prove to be anything of practical utility is far too problematical a point to be definitely answered at the present moment. Sulphate of Ammonia is an article concerning which, in its present position, "the least said is soonest mended," and we cannot but wish that by saying a "little" we could mend the market. Some ultra pessimists are prone in the belief that at present the "market" is an unknown quantity, but we think that the statistics of shipments afford the best answer to this somewhat exaggerated view, particularly the figures for the exports to the U.S.A. Unfortunately, the volume of the business is not so important as the monetary values at which the transactions are affected, and on this point it would indeed be hard not to give vent to pessimistical expressions. Prices at the beginning of the year were none too high, and though an improvement set in, £11. 8s. 9d. being realised, this price resolved itself into a turning point, for since the realisation of this figure there has been a gradual decline. Prices now approximate closely to what threatens to be the vanishing point of profits, since the spot value is to-day from £8. 10s. to £8. 12s. 6d. per ton.

## THE MANURE TRADE

has not been marked by anything of a startling character during the past twelve months. If the paradox is pardonable, it has been in a state of passive activity, cheapness having been the leading *motif*. The prolonged and severe depression in agriculture has truly exercised an adverse influence upon the manure trade; but, on the other hand, it would appear that, just as the restrictions imposed upon the alkali and paper trades led to economies which ultimately developed into sources of revenue, so the depression in agriculture seems to be leading to greater efficiency in farming, and to the more judicious and extensive use of fertilisers. Superphosphates appear to be growing in favour. The price as kept steady, while the continued abundance of cheap

vitriol must be very welcome to manufacturers. To judge by much of the technical literature that has appeared during the last twelve months, the importance of supers. is being recognised, and the advantages of this particular fertiliser brought prominently before farmers. Phosphates are as largely used as ever, it being estimated that the total consumption in this country amounts to four million tons per annum. With regard to the details of prices and their fluctuations, we shall say nothing here, as this matter is fully dealt with in the annual report of the year's trade which will appear in an early issue. Concerning sulphate of ammonia, there is little to add to what we have already said in the preceding paragraph. Its cheapness should make it an exceptionally strong competitor to sodium nitrate, which promises to remain somewhere about its present level. Nitrate of soda, like sulphate, has been well-nigh ruinously cheap, but whether the Combine is effected or not, the possibility of its completion has had the effect of strengthening the market and raising prices a little above the dead level at which they have remained so long. Though the advantages of ploughing-in leguminous crops, specially grown for this purpose, is a factor in the future of nitrogenous fertilisers, we are disposed to think that for the immediate future there is little cause to entertain fears of nitrate, or any other quickly-acting nitrogenous manure, suffering from this new competitor. Copper sulphate has been steady, and though closing a little higher in price, should still be as popular as ever in the production of *Bouillie Bordelaise* and insecticides. Certainly Miss Ormrod's list of the insect pests of '95 shows that there is plenty of work for efficient insecticides to accomplish.

## OIL, PAINT, COLOUR, AND VARNISH MANUFACTURERS

have not experienced any very astounding changes during the past year. The unsettled seasons have had an adverse effect upon the decorator's trade, and, in consequence, the paint trade has suffered at the same time. Things, as a whole, have not been abnormally bad, however, while an indifferent state of trade was in a measure to be expected. From September, when there was a change for the better, things have gone on fairly well, as compared with the customary state of business at the time of year. The seed crushing industry has been rather quiet all along. In a limited degree this state of passivity was due to the shortness of seed during the early months of the year. The relief from this shortness came so tardily that almost before the lost ground was made up the slack season set in. In August there was a slight revival, but since then things have gone on somewhat tamely. There is a certain amount of consolation to be found, however, in the fact that if trade has been persistently quiet it has nevertheless been fairly free from labour disputes, which do so much detriment, by dispelling the confidence which is essential to progression in trade. The outlook for the present year is on the whole promising, the very quietude that prevails for the nonce being suggestive of readiness to turn to good account the first opening the New Year affords.

## GLASS, BRICK AND TILE MANUFACTURERS

can hardly be placed in one class, since the last twelve months has not dealt disaster to both industries in the same degree. With glass-makers matters have, indeed, been bad. The cost of raw materials, disputes, and reckless cutting in the prices of the finished products have been the rocks on which complete or partial wreckage has resulted during the financial storms of the past year; while the struggles of one or two companies have been as pitiful as they were



depressing. The outlook unfortunately is not over bright for though the coal trade is quiet as yet, it would be very venturesome to predict the prolonged duration of the present halcyon condition. The struggle has been hard enough with cheap and regular supplies of coal, and it would be a great relief to know that the supplies and prices were going to remain stationary during the present year. In addition, the price of saltcake has been gradually advancing, and is not likely to fall back to the excessively low prices which prevailed in 1894-5. The brick and tile industry has not been anything like as disappointing as the glass trade. It is true, things might have been better, but then they could almost always be that. Considering the unsettled condition of many of the trades upon which the welfare of the brick and tile industry largely depends it would be hardly fair to complain too bitterly about this branch of business. However unsatisfactory the last twelve months may have been, the future prospects are more promising than they are for many others. Though more or less a negative consolation, it is something in these days to seek solace of any kind and not be wholly disappointed. We come now lastly to

#### OUR READERS IN GENERAL,

concerning whom we must be brief. The important questions pending in the textile trades are likely to react one way or another on calico printers, dyers, bleachers, and the drysalers and mineral merchants from whom supplies are obtained. We trust it may be for the better. Soap and candle manufacturers appear to have a little better outlook, though competition is still very keen. Our aim has been to assist with practical information, and accurate trade reports and statistics all those connected with the industries we have referred to. The appreciation we have met with makes us feel that so far we have fulfilled our aim satisfactorily. But we have not been content to rest. The times demand advance, and we have done our best to meet the demand by inaugurating as a regular feature of the *Journal* weekly abstracts of all the complete specifications of chemical and allied technical or electro-chemical patents, expressly prepared for us by specialists in these subjects. The importance of at least keeping *au courant* with modern patents, even if the acquaintance be superficial, has been too long recognised to need further advocacy. Time, however, is an important element, as well as the price for the specifications. While bearing in mind these two factors we would ask our readers to note the provision we have made, whereby they can, at a glance, gather the drift of every chemical patent and select those that may be of use to them. As regards time we are confident that from our abstracts they can acquire a knowledge of the patents of the week in less time than it would be possible to fathom one average full specification, and as to cost one unabstracted patent a week would cost as much as the *Journal* (containing five or six abstracts) for three weeks, to say nothing of the specifications which are sent for, and prove useless or of no interest. Such information is invaluable to you, and we trust you will not let it pass unheeded. In conclusion we have only to perform the pleasing office of wishing each and every one of our readers, in the old country and beyond,

A HAPPY AND PROSPEROUS 1896.

THE ALGERIAN PHOSPHATE DISPUTE.—The Chamber resumed the debate on the interpellation on the Algerian phosphate concession last week. M. Forcioli, one of the deputies for Algeria, maintained there had been no fraud in connection with the granting of any of the concessions. The debate was adjourned.

## LOW TEMPERATURE RESEARCHES.

By H. GRIME.

(Continued from p. 385, Vol. xvii.)

SO much for the liquids which, by their comparatively common occurrence, have perhaps lost some of their popular interest and charm. We will now turn to the consideration of those liquids, whose production during the past few years in large quantities in open vessels has created as much popular and fashionable interest in chemistry as the experimental lectures of Davy, Faraday, or Tyndall.

Oxygen at 181° is a light blue limpid liquid. When first obtained it is sometimes opaque owing to solidified impurities, but these may be readily removed by filtration. Poured into water, it spatters and hisses like red-hot iron, and presently ice-coated globules of liquid oxygen are seen floating about in the water. Alcohol poured upon liquid oxygen speedily solidifies. Liquid nitrogen is colourless, and, as might thence be inferred, liquid air possesses less colour than liquid oxygen. Indeed, as in the case of the gases, the properties of liquid air seem to be those of diluted oxygen. It is an easy matter to obtain liquid air by means of liquid oxygen. When the latter is allowed to boil under reduced pressure in a tube surrounded by air, drops of liquid air soon begin to trickle down the outside of the tube. The nitrogen and the oxygen liquefy together, although there is a difference of 13° in their boiling-points. They do not, however, boil off simultaneously. As the temperature is allowed to rise the more volatile nitrogen boils away first, and the colour of the liquid is seen to deepen until the liquid becomes practically pure oxygen. Although pure oxygen has never been satisfactorily obtained in a solid condition, in the mass, yet the mixture of oxygen and nitrogen, and argon, constituting atmospheric air has been solidified, and interesting speculations have arisen as to the exact condition of the oxygen in solidified air. Does it exist as a true solid or is it, in a still liquid condition, entangled in the solid nitrogen as liquid water is contained by solid gelatin in a jelly? Perhaps some member of the Society may be able to throw light upon the question.

Oxygen in its allotropic modification, ozone, has been obtained as a dark-blue explosive liquid. Of the general properties of bodies at low temperatures, we may say roughly that while chemical activities almost entirely cease certain physical properties remain. Thus liquid oxygen gives a similar absorption spectrum to that given by the gas. After liquefaction it is as poor a conductor of electricity as before, and it has lost none of its thermal transparency. It retains too its magnetic properties.

As chemists we may be excused for considering the chemical properties first. It may be said at once that experimental evidence all goes to show that at or near the absolute zero of temperature the chemical properties of nearly every substance are about as striking as those of argon at ordinary temperatures. We cannot be much surprised at this; for it is common knowledge that, after a certain point, the chemical activity of a body decreases with the *vis viva* of its molecules; solids as a rule re-acting less readily than liquids or gases. Moreover, as we have been shown of late years by Baker and by Hughes, water plays an important part in determining many chemical reactions. At these low temperatures water can of course be present, if at all, only as a solid, and as such can exert little, if any, of its initiating power. On all grounds, therefore, we should anticipate little chemical activity at low temperatures. Pictet has shown that at -150° no chemical action takes place between such substances as nitric acid or sulphuric acid and caustic potash. Olszewski tells us that the brilliancy of freshly cut sodium or potassium is unimpaired by prolonged contact with liquid oxygen. Similarly at -130° oxygen is without action on phosphorus, on solid sulphuretted hydrogen, and on solid hydriodic acid. The electric pile of sodium and carbon ceases to act when placed in liquid oxygen. When rapid combustion has set in, however, it is not at once terminated by plunging the burning substance into liquid oxygen. A piece of ignited wood immersed in the liquid bursts into flame just as in the gaseous oxygen, and a white-hot steel spring continues to burn with deflagration. Burning sulphur lowered into the liquid continues to burn. I may remind you that analogous experiments have long since been described in reference to nitrous oxide. It is possible to have glowing carbon darting backwards and forwards in a state of active combustion at the surface of nitrous oxide, while below is mercury frozen to a solid mass by the intense cold of the liquid. It need hardly be pointed out that in these combustions the portions of matter actually combining are at temperatures far above the temperature of the liquid gas, the heat generated during the combination being sufficient to prevent the temperature of the reacting portions, for some time at any rate, from falling below the temperature at which they cease to unite. Passing from oxygen compounds we meet a statement by Dewar that liquid ethylene and solid bromine may be brought into contact without any change. On the other hand, Olszewski asserts that he has obtained addition compounds by the reaction of chlorine or bromine with ethylene at -102°, a temperature at which ethylene is liquid and bromine and chlorine solid; the reaction



is, however, much less energetic than at ordinary temperatures. It is only fair to add that possibly Dewar's observations were made at a lower temperature than those of Olszewski, for ethylene is liquid at any temperature between  $-102^{\circ}$  and  $-169^{\circ}$ . Even if Dewar's observations respecting ethylene and the halogens are correct, it cannot be stated that the limits of all chemical activity have yet been reached; for at temperatures as low as  $-180^{\circ}$  photographic action does not altogether cease. Some photographs taken by Dewar at  $181^{\circ}$  have been examined by Captain Abney, and he has reported that at this low temperature there is still about 20 per cent. of the ordinary action. Moreover, Dewar finds that the Eastman film cooled to  $-200^{\circ}$  by the evaporation of liquid air in vacuo is still fairly sensitive to photographic action; he appears to suspect, however, that the action differs in some respects from that at ordinary temperatures. This remains to be decided by future work. The main facts, then, in reference to chemical activity at low temperatures point to the conclusion that matter at absolute zero falls under the jurisdiction of the physicist rather than of the chemist. The explosion of ozone at low temperatures is interesting from a chemical point of view, for it is in accordance with its negative heat of formation. It seems to follow that, if a body formed with evolution of heat becomes less stable as the temperature rises, a body formed with absorption of heat must become less stable as the temperature falls. Let me, to conclude this part of the paper, mention a suggestion put forward some time ago by Pictet. He suggested that a parabolic mirror should be constructed of such dimensions that when it was turned towards the sun the temperature at its focus would be higher than that of the hottest furnace. Placed at the focus should be a sun-chamber, constructed of the most refractory substances. In this chamber could be placed one of the known elements. By means of suitable flues the products of the heat action could be instantly drawn off and cooled by circulating currents of, say, liquid air. Pictet conceives it possible that in this way a number of the commonly accepted elements would be resolved into simpler bodies, which at the very low temperatures of the flues would be incapable of reuniting. The thought of high temperatures is naturally associated in our minds with Moissan and the electric furnace. Perhaps when science has her national or international bureaus of Research she may have her Moissans and Pictets uniting their high-temperature and low-temperature forces in some such way as the above in the search for the primal substance.

#### PHYSICAL PROPERTIES.

We come now to the consideration of the physical properties of bodies at low temperatures. Dewar has shown that the tensile strength of metals is increased at the temperature of boiling oxygen. With regard to optical properties, it has already been stated that the action of bodies on light does not cease at the lowest known temperatures. Indeed, in the case of oxygen the action is so similar to that of the gas that the inference has been drawn that the molecules of liquid oxygen are of the same degree of complexity as those of the gas. In the solar spectrum there are, towards the red end, two dark lines known as A and B, which are supposed to be due to oxygen—either to that in the earth's atmosphere, or, less probably, to oxygen round the sun. Dewar has found that when liquid oxygen is interposed in the path of the electric beam, these two lines, A and B, come out in the spectrum. Olszewski, though he used a volume of liquid oxygen 50 m.m. deep and 30 m.m. thick under atmospheric pressure, failed to detect the band at B; that at A, however, was distinctly marked. It is worthy of remark that in the solar spectrum, A is nearer to the red end, and is much more distinct than B. A and B are not the only lines or bands seen in the absorption spectrum of oxygen. Both the liquid and the gas show a series of five bands situated in the orange, yellow-green, and blue of the spectrum. As to the radiation spectrum so no difficulty was experienced owing to the extremely high electrical resistance of liquid oxygen. With a powerful induction coil sparks would not pass through a thickness of liquid greater than 12 m.m. With a less thickness a series of sparks passed, but the spectrum was continuous with bright lines at intervals. It appeared to be largely due to particles torn from the electrodes by the current. By introducing a Leyden jar into the circuit, and arranging the electrodes so that the sparks passed partly through the liquid and partly through the gas immediately above it, the discharge took place more easily, and the continuous spectrum became, relatively to the lines, less bright. The most prominent lines were those in the green and yellow-green. The lines in the blue, and especially in the orange, were very faint. One of the lines in the yellow-green ( $\lambda 557$ ) is considered to be of some interest, because it falls very near the place of one of the auroral lines. It is noteworthy that the conditions obtaining during these spectrum observations of liquid oxygen resemble those under which the aurora is produced. Nevertheless, great stress cannot be laid upon this approximation; it has been sought on similar grounds to connect the auroral light with the nitrogen or the argon of the atmosphere. Dewar has also observed the spectrum of liquid nitrogen. Without the Leyden jar a banded spectrum is obtained. When the jar is introduced into

the circuit the character of the spectrum changes, and a line spectrum is seen. Olszewski remarks concerning the absorption spectrum of oxygen that it is quite in accord with the blue colour of the liquid. In order to show that the colour was proper to the oxygen and not due to impurities such as ozone or chlorine, he tested the liquid with potassium iodide and starch, and found no ozone reaction. Neither was the colour affected when the liquid was left in contact with sticks of potash. In view of the inactivity of bodies at low temperatures one is inclined to doubt the value of these tests. But there seems little reason to disbelieve that oxygen possesses a bluish colour. Olszewski considers that the colour of liquid oxygen supports the idea that the blue colour of the sky is due, partly, at all events, to the selective action of atmospheric oxygen on the rays of light.

(To be continued.)

### THE SALFORD SEWAGE SCHEME.

THE scheme by which the Borough Engineer proposes to treat the Salford, Pendleton, and district sewage at the Mode Wheel works has been presented to the Corporation River Conservancy Committee. The following are the principal provisions as set forth in the report:—

"I now submit to you a second revision and improvement of the scheme that I submitted in April, 1894. Since that date I have had the advantage of submitting my scheme to the criticism of many experts, including the four firms of civil engineers whom you consulted, the engineers of many local authorities, several inspectors of the Local Government Board, officials from the celebrated experimental sewage works in Massachusetts, and several American and Continental engineers. From each of these gentlemen I have gained valuable information, and from nearly all of them I have had expressions of approval of the main principles and the special details of my scheme. You have already approved and carried out my suggestion for uniting the whole flow of sewage along the central channel. You have, by resolution of 21st August, 1894, approved my suggestion for forming five of the six northern precipitating tanks into one long tank, divided only by dwarf walls. You also decided to alter five of the six southern precipitation tanks into isolated tanks for the continuous upward flow system; but I hope you will reconsider this decision, as about £500 might be saved by making these tanks as above described for the northern tanks. You have also, by resolution on 21st August, 1894, approved of the principle of 'roughing filters,' and you have received the full sanction of the Council, in May, 1894, to your adoption of the principle of filtration of the effluent from the precipitating tanks. You have contracts on hand for almost all the plant required on the sewage works in connection with the loading of your sludge steamer, and this steamer is working most satisfactorily in the disposal of the sewage sludge by carrying it out to sea; so that branch of my scheme may be considered as settled.

"The structural requirements for the complete treatment of the sewage, now awaiting your consideration, are thus narrowed down to three subjects—(1) the removal of sludge from the precipitation tanks, and this you have decided must be done by one of the systems which will not interrupt the continuous use of the tanks; (2) the provision of 'roughing filters' for straining particles of solid matter from the tank effluent; (3) the final filtration of the clarified effluent. As the flow of sewage has recently increased very considerably, I base all the following estimates on an average daily flow of 12,000,000 gallons. As to the first subject, the removal of sludge from the precipitating tanks, I have recently submitted to you a complete and novel scheme for this purpose, by means of a travelling scoop, a pontoon with traversing gear, and pliable pipes to convey the sludge to iron pipes leading to the open channel for filling the new sludge tanks. Experiments on a large scale have been made with a rough model of this apparatus, and the three engineer members of the Council whom you consulted on the subject have recommended you to adopt this scheme. My estimate of the cost of this apparatus, when applied to all the precipitating tanks, together with the pipes and channel to the new sludge tanks, is about £924, and the estimated annual cost of working, including depreciation, &c., about £355—equal to 1s. 8d. per million gallons of sewage. The adoption of this apparatus would allow of using all the precipitation tanks continually, and would thereby allow of a great saving in the quantity of chemicals used. As to the second subject, the provision of roughing filters, the long-continued experiments with the model roughing filters, dealing with 12,000 gallons per square yard per day, and cleansed by upward washing and surface raking, have completely proved the efficiency of such simple and inexpensive filters for removing any visible particles of solid matter from the tank effluent. It was found practicable to run these filters at the rate of 40,000 gallons



per square yard per day, with a head of about two feet of water, over a filter of three feet of sand; but, of course, the efficiency of the filter is greater with the more moderate flow. In the scheme now submitted an area of about 2,040 square yards of roughing filters is provided, by forming six separate filters in the two easterly tanks of the existing twelve precipitation tanks. The cleansing of these filters by upward flow and surface raking, and occasionally by a thorough turning over and washing of their sand, would only occupy a small portion of the time for each filter; but, even allowing for one filter being out of use and only five at work, when dealing with 12,000,000 gallons of sewage per day, the average flow would be only 7,048 gallons per square yard per day, so these filters could readily treat an increased flow in rainy weather up to three or four fold the ordinary flow. I provide for the mechanical cleansing of these filters by an engine and sand-washing machinery, travelling on rails on the filter side walls. I estimate the cost of the preparation of these roughing filters, with their channels, valves, sand, &c., and including the sand-washing engine, at about £4,820., and the annual working expenses, &c., at about £644.—equal to 2s. 11d. per million gallons of tank effluent rough filtered. The work done by these filters would be somewhat similar to that done by the coke-breeze filters at the Glasgow sewage works, or the 'clarifier' at the Swinton sewage works, or the Riddell filters tested at the Salford sewage works. The borough analyst's report of numerous analyses of effluents from the experimental roughing filters on this system show an almost complete removal of all matters in suspension, and a slight reduction in the albumoid ammonia as compared with the tank effluent before rough filtering. It would require but a short time to construct these roughing filters and thereby provide for materially improving the effluent from the existing precipitation tanks. This would remove all serious grounds of complaint during the longer time required for the full completion of the works, and would permanently provide for a fairly efficient treatment of any excessive flow of sewage, short of such a flow as would dilute the sewage matter so much as to permit of its discharge into the river without treatment. As to the third subject, the final filtration of the clarified effluent, we have now the advantage of knowing the results of a great number of experiments, and of several installations of artificial filters at sewage works. The long experience in waterworks filters may also be made available, as their duty is often very similar to that of filtering the clarified effluent from sewage precipitation tanks—as, for instance, at many London waterworks where Thames water is filtered, or formerly at Wakefield, where for a score of years the town's water supply was drawn from the foul river and filtered through a couple of filters used and rested alternately, filled with sand and magnetic carbide, a material similar to that now called polarite. Until recent years the remarkable efficiency of these Wakefield filters was generally credited to their special material, but recent scientific investigations prove conclusively that it was the intermittent use of these filters which rendered them so efficient, by inducing a growth of air-breathing bacteria, which transformed the offensive sewage elements into harmless products. The new waterworks filters at Laurence, Massachusetts, are definitely constructed on this aerating principle, and have given wonderfully good results. The long-continued experiments at the Laurence experiment station of the Massachusetts State Board of Health have clearly proved that sand filters, duly aerated by intervals of rest and drainage, will permanently purify sewage. But these experiments also show that certain insoluble substances gradually accumulate in such filters, and a glutinous substance formed by aggregations of bacteria also accumulates, and that the sand, or other material, must be washed or otherwise renovated sooner or later, the period depending directly on the quantity of sewage matter passed through the filter. Your long-continued experiments on precipitation, followed by intermittent filtration, at the Salford Sewage Works gave similar results.

"The mass of information obtained from these numerous investigations all indicates that the essentials of an efficient sewage filter are—(1) A hard, granular, durable material, free from very fine particles, such as sharp sand with the finest grains riddled out, or coke breeze, or cinders, or crushed brick with the fine dust riddled out; (2) arrangements for intermittent use, with thorough drainage and aeration in the intervals of rest, at least once a day, and preferably many times a day; (3) a flow of not more than 1,000 gallons per square yard per day while in use, with 5ft. depth of filtering materials. On these principles I have designed the aerated filters. The clarified effluent from the roughing filters would be carried by three separate main pipes to the aerated filters, each pipe having a controlling valve, so that one-third or two-thirds of the area can be shut off for aeration while the remaining part is in use, and thus each third of the area would be aerated once a day, or oftener. The filters are arranged in three sections, about 44 yards clear width, and averaging 164 yards in length, a total area of 20,640 square yards, providing for the filtration of 12 million gallons per day, at the rate of 582 gallons per yard of total filter area. The filters are spaced into breadths of eleven yards by lines of tram rails and gangway planks, supported on cast-iron pillars, which also form conduit pipes leading up to the distributing

pipes presently described. The filtering material would be sand, coke breeze, cinders, brick dust, crushed stone, or any other hard, granular, durable material, of 5ft. depth, but with height of walls, &c., ready for adding material to 8ft. depth if required. The clarified sewage would be distributed over the surface of the filters by a network of iron pipes with spray jets, and the filtered effluent would be collected into a 4ft. culvert, under a road alongside the southern boundary fence. This culvert would discharge into a small fishpond, where the pure quality of the effluent would be always visible, and from thence it would pass over a long weir on one side of the intercepting sewer outfall culvert, and so into the Ship Canal. A sandwashing engine, similar to that to be used on the roughing filters, would be in constant use on these aerated filters, washing and opening up the sand so as to continually renovate the filters by removing the insoluble particles and glutinous matter, which tend to choke any filter which is not periodically opened up and cleansed throughout. I estimate that it will be necessary to wash the top layer of filtering sand every six months, the next layer every twelve months, and the bottom layers every two years, and the sand-washing engine proposed is quite capable of doing this work during ordinary working hours.

"Having carefully revised my drawings for the walls, pipes, &c., about these filters since the date of my scheme of April, 1894, I have also provided for more substantial and durable structure than in my first plan, and have estimated the cost afresh in detail throughout. In my opinion the cost of the 20,640 square yards of aerated filters shown on the plans, together with their pipes, valves, culverts, pond, &c. complete, would be about £19,390. The filtering material would cost about £6,900, and the sand-washing engine £600, a total of £26,890. The annual cost of working, and of interest, sinking fund, &c., would be about £2,423, equal to 11s. 1d. per million gallons filtered. I have said nothing hitherto as to the chemicals to be used for the precipitation process, and the machinery, &c., for applying them. There are so many chemical systems, any of which might serve our purpose, that I need not attempt to select one now. But I wish especially to call your attention to the well-proved fact that roughing filters alone, without any tanks or chemicals, can remove 50 or 60 per cent. of the impurities of sewage. In fact such filters can do quite as much clarifying as any ordinary precipitation process. It will therefore be practicable, when the roughing filters are at work, to considerably reduce the quantity of chemicals used. It will also be practicable, by providing more storage space for chemicals, to purchase by the ship load at reduced prices; and by substituting simple lifting and mixing machinery for the excessive amount of hand labour now employed further economies may be effected, so that the total cost of chemicals, machinery, and labour for the precipitation process would not exceed 15s. per million gallons, say thus—5 cwt. sulphate of iron at 1s., 10 cwt. lime at 8d., and 3s. 4d. by 12 equals 40s. per day for the wages of ten men. I propose utilising the outer walls of the existing turbine chambers and overflow shoot, which will be put out of use by the proposed filtration scheme, erecting over them a building to match the lime-mixing house, which would have a basement capable of storing a ship load, say 500 tons, of chemicals, and a ground floor where additional mixing machinery could be placed. The estimated cost of these alterations is given, together with that of altering the tanks and the foregoing special items of estimate for filters, in the estimate of the total expenditure required, amounting to £35,018. The total annual expenditure on sewage treatment, apart from sewage pumping and sludge disposal by steamer, is estimated at £6,870, equal to 31s. 5d. per million gallons of sewage treated.

"It will be seen that this estimate is considerably below any of the tenders which offer sufficient plant to adequately deal with a flow of twelve million gallons per day; and as I am quite certain that no equally efficient system has been submitted to you, I hope you will carry out in its entirety this scheme, of which you have already accepted so many parts. This is the practical outcome of your long-continued experiments, and as such would be sure of the favourable consideration of the Local Government Board. The complete adoption of this scheme and the avoidance of any handing over of your sewage works to patentees or speculators would be a true economy; and would most amply repay the time and attention given by your committee during the past six years to the long series of experiments on an unprecedented scale by which you have done more than any other local authority to finally solve the sewage problem in manufacturing districts."

In a footnote to the report the borough engineer adds:—"The above report omits, by direction of the committee, an addendum describing the works of road forming and paving, tramways, flood-water conduits, workshops, and other structural works not directly connected with the treatment of sewage, the estimated cost of which is about £10,140.; also the amount of expenditure already authorised for the sludge steamer, sludge tanks, sludge pumps, and ~~collateral~~ works, amounting to £15,250."



## THE SPECIAL RULES FOR DANGEROUS OCCUPATIONS.

### II. — ELECTRIC ACCUMULATOR WORKS AND ENAMELLING.

In the manufacture of accumulators the chief danger lies in the mixing of the dry red lead and the litharge used with sulphuric acid. In rubbing these mixtures into the embossed leaden plates there is also a risk of lead poisoning through the pores. Gloves are employed, but they do not afford great protection. By the judicious use of the following method the workers might greatly reduce the risks. A piece of lead with small arms branching from it fits into a mould, and the red lead paste is put into the mould with it, and rubbed in tightly with a presser or roller. The mould is then placed on a drying tray for a few moments. When thus slightly dried, the piece of lead with the moulded paste adhering to it readily separate from the mould, which is used afresh. The principal need for care and provision is in the mixing of the pastes. By the use of respirators and ordinary care, however, the risk even in this department can be reduced to a state of practical safety. The recommendations of the Committee of Inquiry support this assertion, as they were but three in number. The first two emphasise the necessity of the employees using to advantage the respirators and gloves provided. The third ensures the provision of accommodation for washing. The following are the special rules now in force:—

#### DUTIES OF OCCUPIERS

They shall provide a bath and lavatory accommodation, with a plentiful supply of hot and cold water, soap, nail brushes, and towels.

They shall provide respirators and overall suits for all persons employed in the operation of mixing.

They shall provide gloves and aprons for all persons employed in the occupation of rubbing.

They shall see that the gloves are constantly inspected and renewed when defective.

#### DUTIES OF PERSONS EMPLOYED.

In cases where the co-operation of the workers is required for carrying out the foregoing rules, and where such co-operation is not given, the workers shall be held liable in accordance with the Factory and Workshop Act, 1891, section 9, which runs as follows:—"If any person who is bound to observe any special rules established for any factory or workshop under this Act, acts in contravention of, or fails to comply with, any such special rule, he shall be liable on summary conviction to a fine not exceeding two pounds."

Respirators: A good respirator is a cambric bag with or without a thin flexible wire made to fit over the nose.

#### ENAMELLING

is largely confined to the treatment of iron plates for advertisements and other purposes, and the preparation of enamelled and tinned hollow ware. In the sifting on and colouring processes there is little risk, and what there is can be easily obviated. In the execution of the design in the case of plates, the partially fixed enamel is removed by a scratch brush after applying a stencil. The dust thus generated is objectionable, and this process is repeated according to the number of colours required. Lead compounds enter largely into the composition of nearly all the enamels, and hence the risk of lead poisoning. One death was investigated by the Committee. Their findings were by no means wholly condemnatory. It is pleasing to learn that one of the largest enamelling firms has found the new regulations favourable. They can get the respirators worn with a fair amount of regularity, and as there has not been a case of illness for a long time past further trouble is not expected. The most drastic of the Committee's recommendations were the excluding of females under 20 from the brushing room, the supplying of half a pint of milk and a biscuit for each female prior to starting work, and the use of fans on the perforated brushing benches. The other recommendations were much the same as for other lead industries. In connection with the tinning of hollow ware, there was no very important addition to the then existing rules, but in the enamelling of hollow ware for culinary purposes the prohibition of the use of lead or arsenic was suggested. The existing rules for enamelling iron plates are as follow:—

#### DUTIES OF OCCUPIERS.

They shall provide washing conveniences, with a sufficient supply of hot and cold water, soap, nail brushes, and towels, and take measures to secure that every worker wash face and hands before meals and before leaving the works.

They shall provide suitable respirators, overall suits, and head coverings for all workers employed in the processes of grinding, dusting, and brushing.

They shall adopt measures in the dusting and brushing processes for the removal of all superfluous dust, by the use of perforated benches or tables supplied with fans to carry the dust down through the apertures of such benches or tables, the under part of which must be boxed in.

They shall provide a sufficient supply of approved sanitary drink, and shall cause the workpeople to take it.

They shall arrange for a medical inspection of all persons employed at least once a month.

They shall see that no female is employed without previous examination and a certificate of fitness from the medical attendant of the works.

They shall see that no person who has been absent from work through illness shall be re-employed without a medical certificate to the effect that he or she has recovered.

Upon any person employed in the works complaining of being unwell, the occupier shall, with the least possible delay, and at his own expense, give an order upon a doctor for professional attendance and medicine. It is to be understood that this rule will not apply to persons suffering from complaints which have not been contracted in the process of manufacture.

They shall provide a dining-room, and a cloak-room in which the operatives can hang up the clothes in which they do not work.

They shall see that no food is eaten in the works, except in the apartment specially provided for the purpose.

They shall provide for each female before the day's work begins some light refreshment, such as half-pint of milk and a biscuit.

#### DUTIES OF PERSONS EMPLOYED.

Every person to whom is supplied a respirator or overall and head covering shall wear the same when at the work for which such are provided.

Every person shall carefully clean and wash hands and face before meals and before leaving the works.

No food shall be eaten by any person in any part of the works, except in the apartment specially provided for the purpose.

No person may seek employment under an assumed name or under any false pretence.

The advice concerning the respirator and the sanitary drink suggested are exactly the same as given last week under the rules for white lead, etc.

The rules appertaining to tinning and enamelling hollow ware are:—

#### DUTIES OF OCCUPIERS.

They shall provide washing conveniences with a sufficient supply of hot and cold water, soap, nail brushes, and towels; and take measures to secure that every worker wash face and hands before meals and before leaving the works.

They shall provide a dining-room, and shall see that no food is eaten in the works except in such dining-room.

#### THE DUTIES OF PERSONS EMPLOYED

are exactly the same as those given under Accumulator Works. These rules as a whole appear to be working as satisfactorily as any of those resulting from the last inquiry, but communications on any points which are held capable of emendation are invited. Similar information concerning any changes that may appear probable owing to the action of the Committee of Inquiry now sitting (*vide C.T.J.*, 444, p. 319) will be equally welcome.

LAUTARO NITRATE CO., LTD.—The directors announce an interim dividend on account of the year 1895 at the rate of 10 per cent. per annum (5s. per share), free of income tax, payable on January 1. The directors take the opportunity of making the following communication to the shareholders:—"In connection with the attitude of this company towards the proposed combination of nitrate makers, a great many misleading statements, and amongst them some allegations absolutely devoid of truth, have lately been made through the press, at public meetings, and otherwise, by persons interested in other nitrate companies or in the temporary rise of nitrate of soda or shares. Consequently, while confident that the shareholders will put the right value on such interested attacks, the directors are anxious to assure the shareholders that the subject of combination is engaging their constant attention, and that whenever they may be able to agree to any arrangement by which the interests of this company will not be sacrificed to speculation or outside interests, they will gladly accept it. They also beg to inform the shareholders that they have, from the beginning, done all they could to assist in bringing about a sound Combination, as is evidenced from their correspondence for over six months with the parties interested. So far, however, the indispensable precautions suggested by your board have been disregarded, for various but, in the opinion of your directors, insufficient reasons."



## The Patent List.

*This list is compiled from Official sources in the Manchester Technical Laboratory, under the immediate supervision of George E. Davis and Alfred R. Davis, who report professionally upon the value of Chemical Patents.*

### APPLICATIONS FOR ENGLISH LETTERS PATENT.

Production and Automatic Distribution of Acetylene Gas. W. Synncock and G. Gosling. 24,088. December 16.  
Process and Apparatus for Manufacture of Sulphur Dioxide and its Derivatives. J. Enright. 24,127. December 17.  
Improvements in Softening Water and Compositions therefor. G. D. Yates. 24,168. December 17.  
Manufacture of Ammonium Salts. J. H. Darby. 24,171. December 17.  
Apparatus for Manufacture of Acetylene Gas. E. B. Pym and J. Gore. 24,196. December 17.  
Process and Apparatus for the Manufacture of Ozone. C. J. Varnold. 24,289. December 18.  
Manufacture of Nitrogenised Water. H. J. Haddan. 24,297. Dec. 18.  
Cleansing and Manipulating the Material used in Filter Beds for Sewage, etc. J. Corbett. 24,378. December 19.  
Separating and Purifying Colouring Matter from Crude Cottonseed Oil. E. S. Wilson and E. Stewart. 24,418. December 20.  
Obtaining Pure Starch. W. von Siemens and O. N. Witt. 24,455. Dec. 20.  
Treating Potato Starch with Chlorine. C. Hellfrisch. 24,456. Dec. 20.  
Hydraulic Oil Seed Presses. G. P. Wallis. 24,499. December 21.  
Improvements in Purifying or Filtering Oils, Saccharine Solutions, Water, Sewage, etc. G. MacDonald. 24,544. December 21.

### ABSTRACTS OF LATEST COMPLETE SPECIFICATIONS.

*These abstracts are specially prepared for the Chemical Trade Journal and ALL RIGHTS of publication are RESERVED. This is the earliest series of abstracts of Chemical and allied patents accessible to the public.*

Improvements Relating to the Removal of Suint from Wool, Recovering or Separating certain Constituents from the Suint, and Obtaining Valuable Products therefrom. H. E. Newton, 6, Bream's Buildings, Chancery-lane, London (communicated by J. H. Wingfield, Montclair, Essex, New Jersey U.S.A.). Eng. Pat. 20,433. Oct. 29, 1895.

The crude suint is extracted by means of warm heavy petroleum. The exact quantity of the solvent is immaterial so long as there is sufficient excess to ensure perfect extraction, which virtually amounts to  $\frac{3}{4}$  gallon to each pound of wool. The nature of the heavy petroleum is, however, of more importance. Oils rich in the aromatic hydrocarbons impart a distinctive and objectionable smell, for which reason American is preferable to Russian oil. In general, uncracked or so-called neutral oils give better results than cracked oils, for the powers of solution decrease as the refining of the oil proceeds, burning oils being less extractive, and naphthas and benzenes still more so. At the same time, the oils should not be too heavy. Thus oils as heavy as 26° Bé and upwards are not desirable, while with oils as light as 47° Bé and lighter, the product is neither so great as when the heavier oils are employed, nor do they wash out of the wool so readily. The extraction is effected at 120°F.

The extracted wool is then drained from the solvent, and the remainder removed by expression between rollers. The final cleansing is effected by the combined aid of a hydro-extractor and a weak, warm solution of alkali.

The solution of crude suint is drawn off and freed from dirt by filtering, after which it is allowed to cool, when the cholesterol group of the constituents of the suint practically separates entirely. There is also a second layer of liquid, dark brown in colour, and of a bad odour. This latter is highly useful as a leather oil, readily forming an emulsion with water. It also forms a good lubricant. One of the main advantages lies in the fact that the extraction can be carried out in open vessels in woollen mills without the necessity of heating the solvents to a dangerous point, or of cooling them artificially to ensure the separation of the cholesterol group, as the highest temperature required is 120°F., and cooling to the temperature of the surrounding air is enough to accomplish the latter end.

**New or Improved Method of Sewage Precipitation.** G. C. Purvis, 3, Buccleugh-place, Edinburgh. Eng. Pat. 20,366. Oct. 29, 1895.

This invention proposes to add carbon dioxide to sewage, and then sufficient milk of lime to ensure the complete removal of the gas, taking care that the excess of lime is small enough to render the sewage only slightly alkaline. The small excess of lime is generally utilised in precipitating the organic matter in the sewage.

A general guide to the quantities required can be gathered from the following data, which apply to a neutral sewage:—

Six to 12 grains  $\text{CO}_2$  are used to each gallon, and 8.5 to 16 grains of lime ( $\text{CaO}$ ). With sewages which are very foul owing to the presence of  $\text{H}_2\text{S}$ , sulphur dioxide is also employed, an equivalent of lime to effect neutralisation being added as in the case of  $\text{CO}_2$ .

**Improved Method of Producing Magnetic Oxide on Wrought and Cast Iron.** P. H. Bertrand, 12, Rue Violet, Paris. Eng. Pat. 23,855. Sept. 1, 1895.

The process consists in preparing an adhesive varnish, with which the article to be coated with magnetic oxide is covered, and then heated to a high temperature.

The varnish is made by adding one per cent. of  $\text{MnO}_2$  to a vehicle like oil, and boiling the same until the sesquioxide ( $\text{Mn}_2\text{O}_3$ ) is obtained. The object to be treated is then cleaned and coated with the varnish, which is thinned to a convenient consistency with more oil. After being allowed to dry, the article is heated in a furnace to 800° to 1,000°C., whereby a coating of  $\text{Mn}_2\text{O}_3$  is imparted. The thickness of the layer largely depends upon the time devoted to furnacing.

Other vehicles and substances can be employed, as, for instance, an aqueous solution of manganese acetate or cobalt oxides, with which good results have been obtained. The oil and  $\text{MnO}_2$  method is recommended, however, as being the simplest, most practical, and least costly.

## THE HAT-MAKING INDUSTRY IN 1895.

THE felt hat manufacturers in Denton, Stockport, Hyde, and other hatting towns about Manchester report having experienced a very indifferent year. The severe weather experienced during the early months of the year very much hindered the opening out of business, and Easter and Whitsuntide brought comparatively few large orders. The ladies' felt hats have increased in popularity, and proved a good thing for those manufacturers who had made special arrangements for dealing with this class of work. The most taking thing produced in men's styles has been the soft-framed felt hat, and it is generally thought that there will be a great run on this make in the new year. These hats are produced in all kinds of shades, a fact which increases the demand, as the tendency in the domain of fashion generally is to favour the brightest of colours. Silk hatters have rarely, if ever, had a better year, and orders are booked long ahead. The bell-shaped silks are likely to have a very long run, being far more acceptable to the public than the "stove-pipe" style. Many of the hat manufacturers have been very hard hit by foreign competitors, but the Board of Trade returns up to the end of October show that the shipping trade in hats has increased, compared with the previous year. In 1894 the exports for the ten months ending October were 987,606 dozens, value £833,000.; similar period this year, 1,032,296 dozens, value £928,979. The average value per dozen in 1894 was 16s. 10½d.; this year it was increased to 18s. The shipping trade has suffered considerably from the heavy duties imposed by the colony of Victoria. Efforts have been made to get the duty reduced, with the result that the duty on felt hats now stands at 30s. instead of 36s. per dozen, but the duty on silk hats still remains at 60s. Hatter's machinists report a good year's trade, and most of the workshops are still busy, and have a good outlook. A great deal of the machinery used in the East and on the Continent is made in the Manchester district, and, with home orders to execute, the machinists have had a good run for some years. No serious dispute has taken place in the hat trade during 1895, but it is understood that the action of certain employers opening works in the Atherstone district is causing considerable dissatisfaction, it being contended by the men's union that the object in view is simply to avoid paying trade union wages and get the advantage of female labour. Labour disputes have in the past had a most disastrous effect upon the English hat trade, and it is to be hoped that during 1896 any differences between employers and employed will be amicably arranged.

**SOCIETY OF CHEMICAL INDUSTRY.—London Section:** A meeting of the society will be held on January 6th, at Burlington House, at 8 p.m. A paper will be read by Mr. Watson Smith on "A technological study of comparative affinities in the case of certain salts of ammonia," and by Mr. Lovibond on "Colour effect of lime salts on hops in brewing."

**AN OLD PUPIL OF JOHN DALTON.**—Miss Taylor, who recently died at Moston, in her ninety-second year, was a member of an old Moston family, and in the early part of the present century her father, Colonel Taylor, was well known as an active magistrate and colonel of Volunteers. Her nephew, Mr. Henry Taylor, has been well known as a solicitor in Manchester for many years. The deceased had great talents and many accomplishments, and possessed a very extensive knowledge of botany. She was a pupil of Dr. John Dalton, who by his will, dated in 1844, left her a legacy in the following words:—"To my highly esteemed pupil and most agreeable friend, Mary Taylor, of Moston, one hundred pounds, as a testimony of the pleasure I have had in the instruction of one of such superior abilities." Among her papers were several autograph letters from the same distinguished scientist.



## Trade Notes.

**SOCIETY OF CHEMICAL INDUSTRY.—Liverpool Section:** The next meeting of this section will be held on Wednesday, January 8th, at 7-30 p.m., when a paper will be read by Dr. J. T. Conroy on "Some experiments relating to the manufacture of cyanides."

**SERIOUS DISAGREEMENT IN THE OIL TRADE.**—The Standard Oil Company of America has declined to fulfil its engagement to take up a quantity of paraffin scale which could not be otherwise disposed of from one of the Scottish oil companies. The reason given for this breach of agreement is that the candlemakers' combination has broken down in consequence of underselling by Scotch makers, and on this account the Standard Oil Company is no longer in a position to maintain prices. It is feared that this action on the part of the Standard Oil Company will terminate the agreement between Scotch and American producers. The result of this can scarcely fail to be a renewal of keen competition, cutting of prices, and consequent depreciation of the oil companies' shares.

**WOOD AND WOOD PULP VIA THE CANAL.**—Several large cargoes of wood pulp and timber are either due or have arrived in the Manchester Docks from Norway and Sweden during the last few days. Amongst these are heavy shipments from Christiania by the steamers *Oda* (506 tons) and *Vanadis* (699 tons), both of which left that port on the 2nd ult., but were damaged by the gale and had to put back to shelter and refit. On the 19th ult. the steamer *Frigga*, 212 tons, left Christiania, and on the 20th the *Skulda*, 308 tons, left Gothenburg, both with full cargoes, for this port, whilst the *Dalbeattie*, 849 tons, has a similar shipment from Skutskar, which port she cleared on the 18th ult. The Danish steamer *Fano* left Stettin for Manchester on the 20th ult., via Copenhagen, and was to sail hence again for those ports about the 3rd inst. The *Auckland* and *Constance*, of Messrs. Felber, Jucker, and Company's new line from Sweden and Norway, were due this week, and would receive general cargo here for Gothenburg and Christiania, sailing on the 3rd and 12th January respectively. The steamer *W. Harkess*, 736 tons, from Kotka, has been anchored in the Sloyne for several days, bound for Manchester.

**UNLAWFUL COMMISSIONS.**—The hero of "Tom Brown's School-days," when inspiration ran short in the manufacture of Latin verses, was accustomed to fall back on the fine moral apostrophe, "*O genus humanum!*". The same sentiment has often to be invoked in maturer years. "Ye'll find mankind an unco' squad," says Burns, "and muckle they may grieve you." Muckle they have been grieving the Lord Chief Justice with illicit commissions. The Lord Chief Justice has a large experience of life, but even he was not prepared seemingly for a witness's frank avowal that if a traveller was not prepared to spend money freely in bribing foremen and managers he would get no orders either in the dyeing or most other trades. The Lord Chief Justice was shocked and scandalised, but he was able to cap the witness's experience by his own, which was that an unbribed manager would mix ingredients with the dye to spoil goods and discredit the supplying firm. This is blacker still. But the law is not to blame. Everyone knows, or ought to know, that this corruption of agents or persons in a position of trust is entirely contrary to law—that the receiver is not only accountable to his employer for the bribe, but liable to instant dismissal. The law can do no more. It is the old story. "*Quid leges sine moribus?*"—*Law Journal*.

## Market Reports.

### MISCELLANEOUS CHEMICAL MARKET.

Business is active in all branches of the alkali trade, and prices are strong. Caustic soda for export is, if anything, rather firmer, and prices, f.o.b. Liverpool, for prompt and forward delivery, are as follows:—F.o.b. Liverpool, 77%, £9. 7s. 6d.; 74%, £8. 10s.; 70%, £7. 10s.; 60%, £6. 10s., net, 10-ton lots and upwards. Ammonia alkali, 58%, in good demand, and market firm at £3. 7s. 6d. per ton, bags, f.o.r. makers' works. Soda crystals unchanged in value. Leblanc soda ash finds moderate sale at 1d. per degree, casks, f.o.b. Liverpool. Bleaching powder is selling freely, and there is good inquiry for forward delivery: Price firm at £7. 5s. f.o.r. makers' works; contracts over the year, £6 15s.; and f.o.b. Liverpool, for export, £7. 5s. to £7. 7s. 6d., in hardwood casks. Chlorate of potash, 4½d. per lb. Soda, 6½d. per lb., with little change in the position of the market. Sulphate of copper, £16. to £16 5s. f.o.b. Sulphur, still without any improvement in value, and selling freely at £3. 12s. 6d., makers' works, in bulk. Nitrate of soda steady on the spot, at 7s. 6d. to 7s. 7½d. per cwt. Brown acetate of lime, £5. to £5. 5s. c.i.f.; supply is still in excess of demand. All other acetates

are, meantime, weak. Potash, caustic, and carbonate are in good demand, both for prompt and forward delivery, and values are firmly maintained. Arsenic nominal at £15. 15s., net. Garston yellow prussiate of potash, 7¼d. to 8d. per lb. Aniline oil and salt have rather a firmer tendency. Carbolic acid crystals very firm at 6½d. Sulphocyanides quiet; prices unchanged. Trade still continues quiet in many branches, and no doubt this is to some extent due to the holiday season.

### TAR AND AMMONIA PRODUCTS.

Benzols continue firm at 2s. 3d. for 90's and 2s. for 50'90's. There is practically no change in the other products, owing to the intervention of the holidays, but the general outlook inclines to a firm market. Carbolic acids are steady, with 60% crude at 1s. 9½d.; crystals unaltered. Crude naphtha 10d., and solvent 1s. 6d. Pitch steady at 37s. f.o.b., East Coast.

Sulphate is quiet. There is some selling for next month reported in the North at £8. 12s. 6d. Current values for prompt are:—Beckton £9., London outside makes £8. 12s. 6d., Liverpool £8. 12s. 6d., Hull £8. 11s. 3d., and Leith £8. 10s. to £8. 11s. 3d. Nitrate quiet.

### REPORT ON MANURE MATERIAL.

There is still a holiday tone about the market, and business done has not been on any extensive scale. Quotations for mineral phosphates are unchanged. For shipment during first half of the year sellers seem wishful to be making sales, but for later shipment they are not so anxious, current prices being unremunerative, and therefore offering no inducement to sell very far ahead. There is rather more inquiry for cargoes of River Plate bones, and the value may be put at £3. 15s. to £3. 16s. 3d. per ton, according to size and position. Crushed Kurrahee bones offer on spot at £4., without finding buyers. For shipment, £3. 17s. 6d. is now asked for Bombay bone meal, but a shade less would probably be business for good lines. Nitrate of soda is steady at 7s. 7½d. per cwt. for ordinary quality, and 7s. 9d. for refined, on spot. Due cargoes are worth about 7s. 7½d. for ordinary quality, but the prospects of effecting a Combination of raisers being now encouraging, higher prices are being paid for summer shipment. There is nothing special to report in miscellaneous material.

### THE METAL MARKETS.

**LONDON, WEDNESDAY.**—Pig iron, weak: Scotch warrants closed at 45s. 4d.; Middlesbrough, 36s. 5d. cash, and hematite, 46s. 3½d. Copper, firm: Chili bars, G. O. B.'s and G. M. B.'s closed at £41. 2s. 6d. to £41. 7s. 6d. cash, and £41. 10s. to £41. 15s. three months. Tin, weak: Straits closed at £59. 12s. 6d. to £60. 2s. 6d. cash, and £60. 2s. 6d. to £60. 12s. 6d. three months. Australian, £60. 7s. 6d. English ingots, £63. Lead, firmer: Spanish, £11. 6s. 3d.; English, £11. 10s. Silesian spelter, ordinary, £14. 10s. Nickel, 1s. 1½d. Antimony £30. 5s. Quicksilver: first hands, £7. 7s. 6d.; second hands, £7. 4s. Copper shares, steady: Cape, 1½ to 2½; Copiapo, 1½ to 2½; Libiola, 2½ to 2½; Mason and Barry, 2½ to 2½; Rio Tinto, 14½ to 14½; Tharsis, 4½ to 4½.

**GLASGOW, TUESDAY.**—Market flat, with good business. Scotch done at 45s. 4½d., 45s. 3½d., and 45s. 4½d. cash, also at 45s. 7½d., 45s. 5½d., and 45s. 6½d. one month; closing with buyers at 45s. 4d. cash, sellers ask 45s. 4½d. Cleveland done at 36s. 5½d. cash; closing with buyers at 36s. 5d. cash, sellers ask 36s. 5½d. cash. Cumberland hematite done at 46s. 3d. cash, also at 46s. 6d. one month; closing with buyers at 46s. 3½d. cash, sellers ask 46s. 4d. Middlesbrough hematite done 44s. 3d. cash; closing with buyers at 44s. 3d. cash.

### LIVERPOOL MINERAL MARKET.

Our market this week, notwithstanding the usual holidays, has ruled firm, and orders have been booked pretty freely. Indeed, the fluctuations during the past year have been few, and in many cases comparatively unimportant, excepting in manganese, chrome ore, French chalk, and bauxite, in which minerals there has been a strong demand, scarcity of supply, and gradual upward tendency of price. On the other hand wolfram and scheelite somewhat receded in the early part of the year, but have recovered as prices got lower than the cost of production. These minerals are now very strong, and with a good probability of further increase in price, which may fairly be expected during the present year. On the whole the mineral trade during 1895



has been strong, with advancing prices. Manganese arrivals have somewhat improved, but as stocks have not been increased prices remain as last quoted. Ground manganese continues in good request at £6., £8., £10., and £12. 10s. per ton, according to quality. Manganiferous iron ore is unchanged at 15s. to 17s. 6d. per ton, c.i.f. Chrome ore has somewhat increased; the demand, however, for both chemical and metallurgical purposes, is largely improved, and prices are firm at 70s. to 100s. and 105s. per ton, according to grade. Bauxite: In view of the probability of increased demand in the future, prices continue firm at 20s. per ton for first, 16s. for second, and 12s. for third quality, f.o.b., in cargoes. French chalk is specially strong, notwithstanding that arrivals have been considerably increased, and prices are yet firmer: "Angel White" brands are done at 70s. to 75s., 80s. to 90s., and 100s. to 110s. per ton, according to quality. Magnesite continues slow, and is likely to be so until some increased consumption is found. Wolfram and scheelite are strong, and sales have been made at good figures. Arsenic continues with an upward tendency at £16. 10s. to £18. per ton. Fuller's earth: "Emerald" and other brands are steady at 50s. for lump, 55s. for ground, 70s. per ton for impalpable powder. Rottenstone: Prime quality is scarce, and brings full prices—£8. 10s. to £15. per ton, according to grade. Ochres and umbers continue steady: French J C ochre is done at 65s. per ton, and prime umber at 40s. per ton. Oxides of iron sell readily at £6. to £10. per ton for good staining, and prime grades at £18. to £20. per ton. Carbonate of barytes is rather easier, in consequence of the increase stocks, but this will all be required should the winter be severe, so as to prevent dressing at the mines. Sulphate of barytes: Prime quality is scarce, and brings full figures; the demand is good. Fluor and feldspars are unchanged, and the demand is steady at full prices. Emery stone is in more request, prime Turkish stone being done at 75s. to 95s. per ton, according to quality, and Naxos at last prices. Mica: The demand is steady at £15., £18. and £25. per ton for ground. Bog ore is in fair demand at 22s. 6d. per ton. Plumbago continues in strong demand, founders' qualities being done at £6. to £10. per ton, and prime Ceylon at £15. to £20. per ton. Pumice stone: Lump is steady; the demand for powdered is better at £7. to £8. per ton. Iron ore is still quiet at 10s. per ton for Irish, Spanish and other grades quiet, but firm at unchanged prices.

### LIVERPOOL OIL AND COLOUR MARKET.

TUESDAY.

**OILS.**—Palm oil is very quiet, and the market generally has not yet fully recovered from the lull caused by the holidays. There is a small business doing in olive, which is firmly held for recent rates. Linseed is easier, Liverpool makes in export casks now being quoted 20s. 6d. to 21s. per cwt., holders being steady at this price. Cottonseed is firm, with Liverpool refined 17s. 3d. to 17s. 9d. per cwt.; American unaltered. Castor oil is steady, at last week's rates, at which a quiet business has been done. First pressure French varies from 2½d. to 2¾d. per lb. Tallow shows signs of weakness, and in consequence the inquiry is improving. Resin keeps firm in price, with a fairly good demand, considering common stands at 4s. 10½d. per cwt. Spirits of turpentine are firm, and being well inquired for at 21s. 9d. to 22s. per cwt. Petroleum is still quoted 7¾d. to 8½d. for American, though the reported split in the Anglo-American paraffin combination may bring a fall in values. Russian refined, 7d. per gallon.

**COLOURS** are steady, without alteration in prices. Ochres: Oxfordshire, common, £10., medium, £12., best, £15. Derbyshire, common, 40s.; medium, 50s., best, 60s.; Welsh, best, 90s., seconds, 50s., and common, 18s.; Irish, Devonshire, 40s. to 45s.; French, J.C., 60s. to 65s.; M.C., 65s. to 67s. 6d. Umber: Turkish quiet; Devonshire, 50s. to 55s. White lead, £16. Red lead unchanged. Venetian red, £6. to £10. Cobalt: Prepared oxide, 9s. 9d.; black, 9s.; blue, 6s. Zaffres: No. 1, 3s. 6d.; No. 2, 2s. 6d. Oxide of iron: Common, £7.; medium, £10.; finest, £20. Zinc oxide, £22. 10s. to £25.

### WEST OF SCOTLAND CHEMICALS.

GLASGOW, TUESDAY.

This, as the last day of the year, is marked by a general closing of all those works which had not already shut down, and stoppage of production for a week, more or less, to afford space for the annual repairs necessary. The market accordingly has already assumed its holiday aspect, and transactions are at a minimum, the old prices being the rule. The combination of the three chief British producers is attracting a great deal of attention, and causing some speculation. Since last report sulphate of ammonia has been at a dead level around, £8. 10s. per ton prompt, Leith, with very little doing and nothing at all spoken of for forward. Most of the makers are understood to have

put down the foot at £8. 10s., but at the same time it is believed that £8. 8s. 9d. has been done in certain quarters. Mineral oils and paraffins are all strong, and burning oils specially are in very large delivery, with lubricating oils very steady of price, and perhaps inclined to a further rise. Solid paraffins are in moderate demand and old prices sustained.

Chief prices current are:—Soda crystals, £2. 2s. 6d., nett, Tyne; soda ash, 48/56°, £3. 15s. to £4. 15s. nett, Tyne; white alkali, 48/52°, £4. 10s. to £5. nett, Tyne; alum in lump, £5. 10s. nett, Glasgow; caustic soda, white, 76° £9. 5s., 70/72° £7. 10s., 60/62° £6. 10s., and cream 60/62° £6. 7s. 6d., all nett, Liverpool; bleaching powder, £6. 10s. to £7. nett, Tyne; salteake, 27s. 6d.; borax, English, refined, £20., and boracic acid, £30. nett, Glasgow; bicarbonate of soda, 5-cwt. casks, £6. 10s., and 1-cwt. casks £6. 15s. nett, Liverpool; bichromate of potash, 4½d. nett, for Scotch and English deliveries (for export, 4¼d. nett, f.o.b. Glasgow); bichromate of soda, 3¼d. nett, for Scotch and English deliveries (for export, 3½d. nett, f.o.b. Glasgow); chlorate of potash, 4¼d. less 5%, Liverpool; nitrate of soda, 7s. 7½d. to 7s. 10½d.; sulphate of ammonia, £8. 8s. 9d. to £8. 10s. prompt, f.o.b. Leith; salammioniac, first and second white, £39. and £37. nett, any port; sulphate of copper, £16. 2s. 6d. to £16. 7s. 6d., less 5%, Liverpool; paraffin scale, hard, 2½d., and soft, 1¾d. to 2¼d. per lb.; paraffin wax, 120° semi-refined, 2¾d. to 2¾d.; paraffin spirit (naphtha), 7½d. to 8d. per gallon; paraffin oil (burning) No. 1, 6½d., and crystal, 6¾d., at works, for Scotch buyers (English sales about ½d. lower); ditto (lubricating) 865° £4. 15s. to £5., 885° £5. 5s. to £5. 10s., and 890/895° £5. 10s. to £6. 10s. Week's imports of sugar at Greenock were nil.

### TYNE CHEMICAL REPORT

TUESDAY.

Chemicals unaltered in price, and business very quiet. There will be very little doing until after the turn of the year. Prices to-day are nominally:—

Bleaching powder, softs, £7. 5s. per ton, nett; hard, £7. 10s. per ton, nett; caustic soda, 76/77°, £9. 5s. per ton, nett; do., 70%, £7. 15s. per ton, nett; recovered sulphur, 2 cwt. bags, £3. 17s. 6d. per ton, nett; soda ash, 48%, £3. 15s. per ton, nett; do., 52%, £3. 17s. 6d. per ton, nett; do., 56%, £4. per ton, nett; alkali, 36%, £2. 15s. per ton, nett; white alkali, 48%, £4. 10s. per ton, nett; do., 50%, £4. 15s. per ton, nett; do., 52%, £5. per ton, nett; hyposulphite of soda, 5-7 cwt. casks, £6. 10s. per ton, nett; do., 1 cwt. kegs, £7. 5s. per ton, nett; silicate of soda, 75° Tw., £2. 12s. 6d. per ton, nett; do., 100° Tw., £3. per ton, nett; do., 140° Tw., £3. 7s. 6d. per ton, nett; soda crystals, casks, £2. 2s. 6d. per ton, gross weight; do., 2 cwt. bags, £2. 2s. 6d. per ton, nett weight; chlorate of potash, 5d. per lb., less 6%; pearl hardening, £3. per ton, nett; pure white sulphate of alumina, £4. 2s. 6d. per ton, nett; blanc fixe, £7. 10s. per ton, nett; chloride of barium, £7. 10s. per ton, nett; carbonate of alumina, £28. 15s. per ton, nett; aluminate of soda, £33. 15s. per ton, nett; in 5 ton lots, £28. 10s. per ton, nett.

**SALT.**—South Durham salt is steady at 9/6 per ton, f.o.b., Tees.

**COALS.**—There is no alteration to report in prices, but there is a rather better demand for some qualities of coal, particularly gas and bunker. Collieries producing gas coals are well employed, this quality being at the very height of consumption. To-day's quotations are:—Best Northumbrian steam, 7s. 9d. to 8s. per ton; second qualities, 6s. 9d. to 7s. per ton; small steam, 3s. 9d. to 4s. per ton; household coal, 10s. to 11s. per ton; gas coals firm, 7s. to 7s. 6d. per ton; coke steady, 14s. to 14s. 6d. per ton.

### HULL PAINT, OIL, AND COLOUR REPORT.

TUESDAY.

**OILS.**—Linseed oil is again firmer, 18s. 7½d. naked spot month, and 18s. 6d. paid for Jan.-April and May-August. Boiled and refined £1. to £2. per ton extra. Export for week, 1,280 cwt. Refined cotton oil is dull at 14s. 10½d. per cwt. naked spot, and for Jan.-April 15s. 6d. to 15s. 4½d. and May-Aug. 16s. 1½d. Casks £1., and ordinary barrels 30s. per ton extra. The export for the week of refined oil has been 4,160 cwt. Resin is scarce, and commanding enhanced prices. Castor oil from 2½d. to 2¾d. per lb. for first pressure. Olive oil unchanged. Cod oils from £17. to £20. per ton. Boiled siccative oil, £13. per ton. Liquid soap, £16. Debloomed mineral oil for good makes cannot be bought below £8. per ton.

**CAKES.**—The consumption of linseed cakes during the year has been larger than usual. The quality of Hull-made 95% cakes has been very high, the test by analysis now frequently applied has enabled the consumer to perceive that the quality of Hull-made cakes of the best makes is unexcelled. The year opened with the price of 95% at £6. 7s. 6d., and touched the lowest price in May, viz., £5. 12s. 6d.







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| <b>French Chalk</b> —<br>Italy, £180<br><b>Gamboge</b> —<br>Singapore, 8 cs.<br><b>Glucose</b> —<br>U. States, 250 pks. 250 c. L. & I. D. Jt. Co.<br>France, 200 100<br>E. Indies, 1,000 1,000<br>" 350 350<br>" 400 400<br>" 1,386 2,700<br>" 600 3,350<br>" 50 275<br>Germany, 100 100<br>U. States, 100 560<br><b>Glue</b> —<br>—, £1,340<br><b>Lead Acetate</b> —<br>Holland, 28 pks.<br>Germany, 10<br>" 23<br><b>Litharge</b> —<br>Holland, 4 cks.<br>" 4<br><b>Magnesia</b> —<br>Holland, 20 pks.<br><b>Manganese</b> —<br>Germany, 7 c<br><b>Manganese Ore</b> —<br>Germany, 1 t.<br><b>Manure</b> —<br>E. Indies, 50 t.<br>Sydney, 204<br>Germany, 100<br>Holland, 5<br>France, 140<br><b>Methyl Alcohol</b> —<br>Belgium, 4 dms.<br>Holland, 100 pks.<br><b>Mica</b> —<br>Ceylon, £10<br>E. Indies, 2,015<br><b>Naphthaline</b> —<br>Germany, 35 pks.<br><b>Ochre</b> —<br>Spain, 80 brls.<br>France, 4 cks.<br>Holland, 6 cs. 10 pks.<br><b>Phosphates</b> —<br>Belgium, 200 t.<br>" 230<br><b>Phosphate of Lime</b> —<br>France, 647 t.<br><b>Pitch</b> —<br>France, 69 cks.<br>Sweden, 150 brls.<br>France, 47<br><b>Plumbago</b> —<br>Ceylon, 372 cks. 56 brls.<br>Germany, 3<br>" 65<br>Ceylon, 194 brls.<br>" 32<br>" 214<br><b>Potassium Bicarbonate</b> —<br>Germany, 8 pks.<br><b>Potassium Carbonate</b> —<br>France, 200 c.<br>Germany, 100<br>Holland, 80<br>France, 30<br>Holland, 20<br>Holland, 420<br><b>Potassium Oxalate</b> —<br>Holland, 14 pks.<br><b>Potassium Silicate</b> —<br>Holland, 25 pks.<br><b>Potassium Sulphate</b> —<br>Germany, 116 pks.<br><b>Pumice Stone</b> —<br>Holland, 2 t.<br>Italy, 3<br>" 2<br><b>Pyrites</b> —<br>Spain, 1,083 t.<br>" 1,986 | <b>Rosin</b> —<br>Germany, 8 cks.<br>U. States, 2,086 brls.<br>Holland, 10<br>U. States, 4,000<br><b>Saltpetre</b> —<br>E. Indies, 657 bgs.<br>Germany, 70 cks.<br>" 40<br>" 500 bgs.<br>Belgium, 30 cks.<br>" 85<br><b>Silla</b> —<br>Germany, 50 t.<br><b>Sodium Binoxalate</b> —<br>Holland, 19 pks.<br><b>Sodium Hyposulphate</b> —<br>Holland, 13 pks.<br><b>Sodium Prussiate</b> —<br>Belgium, 21 pks.<br><b>Sodium Sulphate</b> —<br>Belgium, 38 pks.<br><b>Sodium Sulphide</b> —<br>Belgium, 25 pks.<br><b>Starch</b> —<br>Holland, 259 pks.<br>Belgium, 40<br>Holland, 75<br>Belgium, 144<br>" 200<br>U. States, 55<br>Germany, 50<br>" 30<br>U. States, 150<br>Belgium, 73<br>Austria, 50<br>Holland, 160<br>Belgium, 20<br><b>Stearine</b> —<br>Belgium, 63 bgs.<br><b>Sulphur</b> —<br>Italy, 5 t.<br>" 13<br>" 300<br>" 5<br>" 200<br><b>Talc</b> —<br>E. Indies, £185<br>France, 30<br><b>Tartaric Acid</b> —<br>Holland, 4 pks.<br>Germany, 30<br>France, 49<br>Holland, 30<br><b>Turpentine</b> —<br>Rep., Col., 500 brls.<br><b>Ultramarine</b> —<br>Germany, 24 cks.<br>Holland, 7 pks.<br>Belgium, 20 cks.<br>Germany, 35 pks.<br><b>Varnish</b> —<br>U. States, 4 cs.<br>Holland, 25 pks.<br><b>Verdigris</b> —<br>France, 3 pks.<br><b>White Lead</b> —<br>Aus. Terr., 10 cs.<br>Holland, 34 cks.<br>Belgium, 74<br>Holland, 43<br>Germany, 38<br>" 16<br>Belgium, 19<br>France, 12<br>Holland, 8<br>Belgium, 16<br>France, 8 bgs.<br><b>Wood Pulp</b> —<br>Norway, 600 bls.<br>Sweden, 3,000<br>" 3,650<br>" 6,000<br>Germany, 612<br>Canada, 2,528<br>Holland, 11<br>" 931 | " 55<br><b>Zinc Oxide</b> —<br>Holland, 50 cks.<br>" 1<br>" 200<br>U. States, 200<br>Germany, 9<br>Thames S. T. & L. Co.<br>M. Ashby, Ld.<br>G. Rahn & Co.<br>Hubbuck & Sons<br>M. Ashby, Ld.<br>H. Lambert<br><b>LIVERPOOL.</b><br>Week ending December 19th.<br><b>Acetate of Lime</b> —<br>New York, 1,032 bgs.<br><b>Acetic Acid</b> —<br>Rotterdam, 10 blns.<br><b>Aluminium</b> —<br>Hamburg, 1 cs.<br><b>Ammonia</b> —<br>New York, 10 dms.<br><b>Aniline Colours</b> —<br>Paris, 6 cks. 5 cs.<br><b>Barytes</b> —<br>Antwerp, 200 bgs.<br><b>Bone Ash</b> —<br>River Plate, 469 bgs.<br><b>Bone Meal</b> —<br>Calcutta, 1,120 bgs<br>Bombay, 4,650<br><b>Borate of Lime</b> —<br>Huanchaco, 1,794 bgs.<br><b>Borax</b> —<br>Valparaiso, 870 sks.<br><b>Colours</b> —<br>Hamburg, 3 cs.<br><b>Cottonseed Oil</b> —<br>New York, 200 brls.<br><b>Cream of Tartar</b> —<br>Barcelona, 5 cks.<br><b>Dextrine</b> —<br>Stettin, 100 bgs.<br>" 200<br><b>Dyestuffs</b> —<br><b>Algarroilla</b><br>Valparaiso, 72 sks<br>Havre, 58 bgs.<br><b>Annatto</b><br>Bordeaux, 3 cks.<br><b>Cochineal</b><br>Gd. Canary, 29 bgs.<br>" 43<br><b>Cutch</b><br>Rangoon, 1,850 bxs.<br><b>Extracts</b><br>New York, 5 brls.<br>Fiume, 350<br>Antwerp, 50 cks.<br>Bordeaux, 150<br>Philadelphia, 95<br>Baltimore, 874 ps.<br>" 474<br><b>Indigo</b><br>Calcutta, 16 chts.<br><b>Logwood</b><br>St. Lucia, 580 t.<br><b>Myrabolams</b><br>Bombay, 457 bgs.<br><b>Orchella</b><br>Guayaquil, 6 bls.<br><b>Saffron</b><br>Valencia, 3 cs.<br><b>Sumac</b><br>Trieste, 100 bls.<br><b>Farina</b> —<br>Stettin, 20 bgs.<br>" 9,700<br>Hamburg, 2,050<br>New York, 300 brls.<br>Boston, 95<br>Rotterdam, 40 bgs.<br>Hamburg, 20 bls. | <b>Infusorial Earth</b> —<br>Rotterdam, 176 bgs.<br><b>Limestone</b> —<br>Antwerp, 1 crt.<br>" 1<br><b>Manganese</b> —<br>Huelva, 401 t.<br><b>Manganese Ore</b> —<br>Stratone, 2,330 t.<br><b>Ochre</b> —<br>Rouen, 4 cks.<br><b>Paint</b> —<br>New York, 30 brls.<br>Antwerp, 1 cs.<br>Boston, 20<br>New York, 1<br><b>Paraffin Scale</b> —<br>New York, 100 brls.<br>Baltimore, 401<br>New York, 472<br><b>Phosphate</b> —<br>Antwerp, 320 l. 100 bgs.<br><b>Potash</b> —<br>Hamburg, 100 cks.<br><b>Potash Salts</b><br>Hamburg, 206 bgs.<br><b>Potassium Chlorate</b> —<br>Gothenburg, 10 kgs. 3 bxs.<br><b>Potassium Chloride</b> —<br>Hamburg, 2,946 bgs.<br><b>Pyrites</b> —<br>Huelva, 1,539 t.<br>" 780<br><b>Saltpetre</b> —<br>Hamburg, 20 brls. 25 kgs.<br><b>Silver Sulphide</b> —<br>Valparaiso, 5 bgs.<br>" 3<br><b>Soap</b> —<br>Bari, 337 cs.<br>Naples, 277<br>Boston, 2<br>" 10<br><b>Soapstone</b> —<br>Genoa, 450 bgs.<br>Bordeaux, 200<br><b>Starch</b> —<br>New York, 500 bgs.<br>Rotterdam, 10 cs.<br>Hamburg, 228<br><b>Stearine</b> —<br>Antwerp, 76 bgs.<br><b>Tallow</b> —<br>Baltimore, 200 tcs.<br>Philadelphia, 139<br>Hamburg, 81 cs.<br><b>Tar</b> —<br>Genoa, 150 brls.<br><b>Tar Salts</b> —<br>Hamburg, 3 cks.<br><b>Tartar</b> —<br>Bordeaux, 6 cks.<br><b>Tartaric Acid</b> —<br>Bari, 23 cks.<br>Hamburg, 4<br><b>Verdigris</b> —<br>Bordeaux, 4 cks.<br><b>Waste Salt</b> —<br>Antwerp, 100 bgs.<br>Hamburg, 480 cks.<br><b>White Lead</b> —<br>Rotterdam, 1 ck.<br><b>Wood Pulp</b> —<br>Romeby, 3,720 bls.<br>Rotterdam, 30<br>Christiania, 4,859<br><b>Zinc Oxide</b> —<br>New York, 80 brls.<br>Antwerp, 2 cs. 22 cks. 50 936 pils.<br>Rotterdam, 10<br><b>Zinc White</b> —<br>Hamburg, 80 cks.<br>Rotterdam, 100 |
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**MANCHESTER.**

Week ending December 21st.

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| <b>Acetate of Lime</b> —<br>New York, 1,020 bgs. J. W. Coulston | <b>Acetic Acid</b> —<br>Rotterdam, 93 bls. | <b>Albumen</b> —<br>Hamburg, 4 cks. | <b>Alumina Sulphate</b> —<br>Rotterdam, 15 cks. | <b>Antimony Oxalate</b> —<br>Rotterdam, 4 cks. | <b>Antimony Salts</b> —<br>Rotterdam, 10 cks. | <b>Colours</b> —<br>Hamburg, 4 cs.<br>Ghent, 6 bls.<br>Antwerp, 16<br>Rotterdam, 108 17 37 cks.<br>16 bks. | <b>Cream of Tartar</b> —<br>Rotterdam, 8 cks. | <b>Dextrine</b> —<br>Stettin, 290 bgs. | <b>Dyestuffs</b> —<br>Alizarine<br>Rotterdam, 9 cks. 2 cs.<br>Extracts<br>Treport, 47 cks.<br>Indigo<br>Rotterdam, 6 cks. | <b>Farina</b> —<br>Hamburg, 300 bgs.<br>Stettin, 2,350 Browne, Geveke, & Co.<br>" 30 W. Poppelreuter<br>" 400 E. Fal Arndt<br>" 50 T. M. Duché & Sons<br>" 450 | <b>Glucose</b> —<br>New York, 199 bls. T. M. Duché & Sons<br>Stettin, 200 bgs. Trier, Meyer, & Co.<br>" 1,000 J. Frank & Ollasen | <b>Gluc</b> —<br>Hamburg, 30 bgs.<br>Stettin, 110<br>Antwerp, 3 cks.<br>Rotterdam, 20 4<br>Treport, 71 bls. | <b>Limestone</b> —<br>Antwerp, 3 crts. | <b>Litharge</b> —<br>Rotterdam, 16 cks. 2 | <b>Manganese Chlorate</b> —<br>Hamburg, 1 ck. | <b>Ochre</b> —<br>Treport, 20 cks. | <b>Oxalic Acid</b> —<br>Rotterdam, 14 cks. | <b>Pitch</b> —<br>Rotterdam, 11 cks. | <b>Potash</b> —<br>Rotterdam, 20 cks.<br>Treport, 32 | <b>Potassium Prussiate</b> —<br>Rotterdam, 7 cks. | <b>Sheep Dip</b> —<br>Rotterdam, 5 bgs. | <b>Starch</b> —<br>New York, 650 bgs. T. M. Duché & Sons<br>" 300<br>Antwerp, 20 cs.<br>Rotterdam, 40 | <b>Stearine</b> —<br>New York, 17 tcs. Co-op. W'sale Society Ltd. | <b>Tallow</b> —<br>New York, 150 hds. Co-op. W'sale Society, Ltd. | <b>Tartar Emetic</b> —<br>Hamburg, 10 cks. | <b>Tartaric Acid</b> —<br>Rotterdam, 57 cks. | <b>Tin Oxalate</b> —<br>Rotterdam, 12 bls. | <b>Ultramarine</b> —<br>Rotterdam, 2 cks. | <b>Yarnish</b> —<br>New York, 20 bls. Pinchin, Johnson, & Co.<br>" 8 J. Marsden | <b>Waste Salt</b> —<br>Hamburg, 1,000 bgs. qty. |
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| <b>White Lead</b> —<br>Rotterdam, 9 cks. | <b>Wood Pulp</b> —<br>Copenhagen, 80 bls.<br>Sannesund, 4,146<br>Kotka, 2,602 Manchester Ship Canal Co. | <b>Zinc Ashes</b> —<br>Stettin, 9 cks. J. Bayley & Co.<br>" 17 G. Kenyon<br>" 15 W. Heywood<br>" 8 J. Laing, Son, & Co.<br>Antwerp, 12 cs. | <b>Zinc Oxide</b> —<br>Rotterdam, 145 bls. | <b>Zinc White</b> —<br>Rotterdam, 10 cks. |
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**HULL.**

Week ending December 21st.

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| <b>Acetic Acid</b> —<br>Rotterdam, 57 bls. Hutchinson & Son | <b>Acid</b> —<br>Bari, 8 cks. Wilson, Sons, & Co., Ltd. | <b>Alkali</b> —<br>Bremen, 2 pks. Veltmann & Co. | <b>Alum</b> —<br>Rotterdam, 37 cks. W. & C. L. Ringrose | <b>Barytes</b> —<br>Bremen, 68 cks.<br>Rotterdam, 48 Hutchinson & Son<br>Amsterdam, 24<br>Antwerp, 184 Bailey & Leatham | <b>Bleaching Powder</b> —<br>Antwerp, 26 cks. Wilson, Sons, & Co., Ltd. | <b>Chemicals (otherwise undescribed)</b><br>Bremen, 8 pks. Veltmann & Co.<br>Rotterdam, 2 cks. 12 tins Hutchinson & Son<br>Hamburg, 7 Wilson, Sons, & Co., Ltd.<br>" 3 cs.<br>Danzig, 10<br>Rotterdam, 1 W. & C. L. Ringrose<br>Dunkirk, 17 24 pks. Wilson, Sons, & Co., Ltd.<br>" 3 dms. " | <b>Cod Oil</b> —<br>Aalesund, 17 bls. Wilson, Sons, & Co., Ltd. | <b>Colours</b> —<br>Bergen, 69<br>Riga, 241 cks. Wilson, Sons, & Co., Ltd.<br>Hamburg, 45<br>" 10 cs. G. Malcolm & Son<br>Danzig, 10 bls. Wilson, Sons, & Co., Ltd.<br>Rotterdam, 25 pks. 33 cks. 24 cs. W. & C. L. Ringrose<br>" 12 cks. 23 bls.<br>Antwerp, Wilson, Sons, & Co., Ltd. | <b>Copper Sulphate</b> —<br>Hamburg, 33 cks. Wilson, Sons, & Co., Ltd. | <b>Cryolite</b> —<br>Copenhagen, 2 cks. Wilson, Sons, & Co., Ltd. | <b>Dextrine</b> —<br>Stettin, 150 bgs. Wilson, Sons, & Co., Ltd. | <b>Dyestuffs</b> —<br>Alizarine<br>Rotterdam, 54 cks. 56 bls. W. & C. L. Ringrose<br>" Shumac<br>Trieste, 89 bls. Wilson, Sons, & Co., Ltd.<br>Palermo, 1,935 bgs. " | <b>Farina</b> —<br>Stettin, 875 bgs. Wilson, Sons, & Co., Ltd.<br>Ghent, 307<br>" " | <b>Glucose</b> —<br>Boston, 50 bls. Wilson, Sons, & Co., Ltd.<br>New York, 300 | <b>Glue</b> —<br>Rouen, 45 cs. 54 cks. 15 bls. Rawson & Robinson<br>Rotterdam, 3 Hutchinson & Son<br>New York, 30 bls. |
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| Dunkirk, 75 Wilson, Sons, & Co., Ltd. | Bergen, 2 pks. " | <b>Lead Acetate</b> —<br>Rotterdam, 4 cks. Hutchinson & Son | <b>Manure</b> —<br>Ghent, 280 t.<br>Antwerp, 816 bgs. Wilson, Sons, & Co., Ltd. | <b>Ochre</b> —<br>Rouen, 37 cks. | <b>Paint</b> —<br>New York, 30 bls. | <b>Phosphate Rock</b> —<br>Pt. Royal, 1,350 t. Hammond, Emes, & Co. | <b>Pitch</b> —<br>Rotterdam, 53 cks. W. & C. L. Ringrose<br>Amsterdam, 26 " | <b>Plumbago</b> —<br>Hamburg, 3 cks. Wilson, Sons, & Co., Ltd. | <b>Pumice Stone</b> —<br>Trieste, 2 pks. Wilson, Sons, & Co., Ltd. | <b>Pyrites</b> —<br>Huelva, 1,007 t. | <b>Rosin</b> —<br>Savannah, 1,000 bls. G. & J. Rawstorn, Ltd. | <b>Saltpetre</b> —<br>Hamburg, 20 cks. Bailey & Leatham<br>" 2 Wilson, Sons, & Co., Ltd. | <b>Soap</b> —<br>Bari, 50 cs. Wilson, Sons, & Co., Ltd.<br>New York, 600 pks. | <b>Starch</b> —<br>Bremen, 1,296 pks. Veltmann & Co. | <b>Stearine</b> —<br>Antwerp, 14 pks. Wilson, Sons, & Co., Ltd. | <b>Sulphur</b> —<br>Catania, 286 pks. Wilson, Sons, & Co., Ltd.<br>" 51 t. 20 bls. | <b>Tartar</b> —<br>Bordeaux, 5 cks. Rawson & Robinson | <b>Tartaric Acid</b> —<br>Rotterdam, 11 cks. Hutchinson & Son | <b>Treacle</b> —<br>Boston, 200 bls. Wilson, Sons, & Co., Ltd.<br>New York, 75 " | <b>Turpentine</b> —<br>Libau, 52 bls. 104 cks.<br>Savannah, 2 121 G. & J. Rawstorn, Ltd. | Bordeaux, 10 cks. | <b>Ultramarine</b> —<br>Rotterdam, 7 cks. Hutchinson & Son | <b>Varnish</b> —<br>New York, 32 bls. Wilson, Sons, & Co., Ltd. | <b>White Lead</b> —<br>Amsterdam, 46 cks. Hutchinson & Son<br>Antwerp, 22 Bailey & Leatham<br>Rotterdam, 105 W. & C. L. Ringrose | <b>Wolfram</b> —<br>Hamburg, 10 cs. Wilson, Sons, & Co., Ltd. | <b>Wood Pulp</b> —<br>Helsingfors, 136 bls. J. Good & Sons<br>" 317 W. Shipstone & Co.<br>" 24 Farley & Co.<br>" 16 | <b>Zinc Oxide</b> —<br>Antwerp, 80 cks. Bailey & Leatham | <b>Zinc White</b> —<br>Rotterdam, 30 cks. W. & C. L. Ringrose<br>Hamburg, 17 Bailey & Leatham |
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**GLASGOW.**

Week ending December 26th.

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| <b>Albumen</b> —<br>Hamburg, 9 cs. |
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| <b>Alumina Sulphate</b> —<br>Rotterdam, 40 cks. J. Rankine & Son | <b>Aniline</b> —<br>Hamburg, 10 cks. | <b>Aniline Salts</b> —<br>Rotterdam, 9 cks. J. Rankine & Son | <b>Asbestos</b> —<br>Reval, 113 bgs. | <b>Barium Sulphate</b> —<br>Antwerp, 100 bgs. | <b>Barytes</b> —<br>Rotterdam, 119 cks. J. Rankine & Son<br>" 7 pks. | Hamburg, 10 | <b>Boracic Acid</b> —<br>Leghorn, 20 cks. | <b>Caoutchouc</b> —<br>Hamburg, 1 cs. | <b>Castor Oil</b> —<br>Antwerp, 115 cks. | <b>Citric Acid</b> —<br>Messina, 4 cks. | <b>Cobalt Oxide</b> —<br>Rotterdam, 1 cs. J. Rankine & Son | <b>Dyestuffs</b> —<br>Alizarine<br>Rotterdam, 40 cks. J. Rankine & Son<br>" 28 pks. | Argols<br>Bordeaux, 35 cks. | <b>Extracts</b><br>Fiume, 100 bls. Geo. Dickson<br>Nantes, 150 cks. | <b>Madder</b><br>Rotterdam, 4 cks. J. Rankine & Son | <b>Sumac</b><br>Palermo, 670 bgs. 50 bls. | <b>Farina</b> —<br>Delfzijl, 500 bgs. | <b>French Chalk</b> —<br>Fiume, 120 bgs. P. M'Intosh & Son | <b>Glue</b> —<br>Genoa, 25 cks. | <b>Lactic Acid</b> —<br>Boston, 4 bls. 4 kgs. | <b>Magnesite</b> —<br>Hamburg, 27 cks. | <b>Manganese</b> —<br>Rotterdam, 7 cks. J. Rankine & Son | <b>Painters' Colours</b> —<br>Antwerp, 5 cks. 5 cs.<br>Rotterdam, 9 2 J. Rankine & Son<br>" 13 pks. | Hamburg, 3 | <b>Phosphate</b> —<br>Bona, 850 t. | <b>Potash</b> —<br>Rotterdam, 61 cks. J. Rankine & Son | <b>Pumice Stone</b> —<br>Messina, 4 cs. | <b>Soap</b> —<br>Fiume, 27 cs. | <b>Sodium Bicarbonate</b> —<br>Fiume, 21 cks. Bryce & Rumpff | <b>Starch</b> —<br>Antwerp, 45 cs.<br>Ghent, 19<br>Fiume, 2 bgs.<br>Rotterdam, 40 J. Rankine & Son | <b>Stearine</b> —<br>Drontheim, 31 cks.<br>Antwerp, 63 bgs.<br>Amsterdam, 98 | <b>Sulphur</b> —<br>Fiume, 191 bgs.<br>Catania, 789 | <b>Tartar</b> —<br>Bordeaux, 19 cks. | <b>Tartaric Acid</b> —<br>Messina, 4 cks. | <b>Ultramarine</b> —<br>Rotterdam, 6 cs. J. Rankine & Son | <b>Waste Salt</b> —<br>Hamburg, 3,111 bgs. 268 cks. |
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| <b>White Lead—</b> |          |                  |
| Rotterdam,         | 112 cks. | J. Rankine & Son |
| <b>Wood Pulp—</b>  |          |                  |
| Drontheim,         | 700 bls. |                  |
| Fiume,             | 510      |                  |
| Christiania,       | 160      | Alsing & Co.     |
| "                  | 976      |                  |

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| <b>Zinc White—</b> |          |                  |
| Rotterdam,         | 100 cks. | J. Rankine & Son |

**TYNE.**

Week ending December 21st.

|                    |          |                |
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| <b>Barium—</b>     |          |                |
| Rotterdam,         | 200 bgs. | Tyne S. S. Co. |
| <b>Barytes—</b>    |          |                |
| Antwerp,           | 200 bgs. | Tyne S. S. Co. |
| Rotterdam,         | 45 cks.  | "              |
| <b>Glue—</b>       |          |                |
| Hamburg,           | 1 ck.    | Tyne S. S. Co. |
| <b>Kieselguhr—</b> |          |                |
| Bergen,            | 103 bgs. |                |

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| <b>Limestone—</b> |          |                       |
| Antwerp,          | 5 cts.   | Tyne S. S. Co.        |
| <b>Phosphate—</b> |          |                       |
| Fernandina,       | 2,170 t. | Furness, Withy, & Co. |

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| <b>Soap—</b> |       |                |
| Rotterdam,   | 4 cs. | Tyne S. S. Co. |

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| <b>Starch—</b> |         |                |
| Antwerp,       | 16 bxs. | Tyne S. S. Co. |
| Rotterdam,     | 126 cs. | "              |

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| <b>Wood Pulp—</b> |          |  |
| Christiania,      | 360 bls. |  |
| Skein,            | 580      |  |

**GOOLE.**

Week ending December 18th.

|                                          |              |  |
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| <b>Alum—</b>                             |              |  |
| Rotterdam,                               | 50 bgs.      |  |
| <b>Barytes—</b>                          |              |  |
| Rotterdam,                               | 11 cks.      |  |
| <b>Caoutchouc—</b>                       |              |  |
| Boulogne,                                | 7 cks. 3 cs. |  |
| <b>Coal Products (otherwise undes.)—</b> |              |  |
| Rotterdam,                               | 50 cks.      |  |

|                 |          |  |
|-----------------|----------|--|
| <b>Colours—</b> |          |  |
| Rotterdam,      | 3 cks.   |  |
| Hamburg,        | 5 22 cs. |  |
| Ghent,          | 22 1     |  |

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| <b>Dyestuffs—</b> |          |  |
| Alizarine         |          |  |
| Rotterdam         | 76 brls. |  |
| <b>Extracts</b>   |          |  |
| Rouen,            | 9 cks.   |  |

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|----------------|--------|--|
| <b>Logwood</b> |        |  |
| St. Lucia,     | 750 t. |  |
| Belize,        | 478    |  |
| Jamaica,       | 534    |  |
| Monte Christi, | 504    |  |

|                                          |                 |  |
|------------------------------------------|-----------------|--|
| <b>Dyestuffs (otherwise undescribed)</b> |                 |  |
| Rotterdam,                               | 117 cks. 26 cs. |  |
| Boulogne,                                | 32 39 pkgs. 8   |  |

|                |          |  |
|----------------|----------|--|
| <b>Farina—</b> |          |  |
| Hamburg,       | 700 bgs. |  |
| Delfsbyl,      | 599      |  |

|                 |         |  |
|-----------------|---------|--|
| <b>Glucose—</b> |         |  |
| Hamburg,        | 20 cks. |  |

|                |          |  |
|----------------|----------|--|
| <b>Potash—</b> |          |  |
| Rotterdam,     | 156 cks. |  |
| Hamburg,       | 12       |  |

|                   |          |  |
|-------------------|----------|--|
| <b>Saltpetre—</b> |          |  |
| Rotterdam,        | 210 bgs. |  |
| Hamburg,          | 22 cks.  |  |
| Antwerp,          | 85       |  |

|                    |                   |  |
|--------------------|-------------------|--|
| <b>Soda—</b>       |                   |  |
| Rotterdam,         | 1 cs.             |  |
| <b>Waste Salt—</b> |                   |  |
| Hamburg,           | 200 cks. 500 bgs. |  |

**GRIMSBY.**

Week ending December 21st.

|                    |         |  |
|--------------------|---------|--|
| <b>Caoutchouc—</b> |         |  |
| Rotterdam,         | 5 cs.   |  |
| Hamburg,           | 4       |  |
| Antwerp,           | 1 pkge. |  |

|                                          |          |  |
|------------------------------------------|----------|--|
| <b>Chemicals (otherwise undescribed)</b> |          |  |
| Hamburg,                                 | 52 pkgs. |  |
| Antwerp,                                 | 73       |  |
| Rotterdam,                               | 30 bgs.  |  |

|                 |          |  |
|-----------------|----------|--|
| <b>Colours—</b> |          |  |
| Rotterdam,      | 14 pkgs. |  |

|              |          |  |
|--------------|----------|--|
| <b>Dyes—</b> |          |  |
| Antwerp,     | 44 pkgs. |  |

|                |         |  |
|----------------|---------|--|
| <b>Farina—</b> |         |  |
| Hamburg,       | 90 bgs. |  |

**EXPORTS OF CHEMICAL PRODUCTS**

OF

**THE PRINCIPAL PORTS OF THE UNITED KINGDOM.****LONDON.**

Week ending December 25th.

|               |                |     |
|---------------|----------------|-----|
| <b>Acids—</b> |                |     |
| Singapore,    | 3 cs. 18 cbys. | £30 |
| Colombo,      | 11             | 27  |
| Natal,        | 20             | 37  |

|                |           |     |
|----------------|-----------|-----|
| <b>Alkali—</b> |           |     |
| Singapore,     | 3 t. 6 c. | £10 |

|                 |          |     |
|-----------------|----------|-----|
| <b>Ammonia—</b> |          |     |
| Adelaide,       | 10 c.    | £10 |
| Algoa Bay,      | 26 cs. 3 | 53  |

|                            |           |     |
|----------------------------|-----------|-----|
| <b>Ammonium Carbonate—</b> |           |     |
| Paris,                     | 2 t. 5 c. | £83 |

|                           |        |     |
|---------------------------|--------|-----|
| <b>Ammonium Chloride—</b> |        |     |
| Antwerp,                  | 4 cks. | £26 |
| Cape Town,                | 10 c.  | 18  |

|                          |         |      |
|--------------------------|---------|------|
| <b>Ammonium Nitrate—</b> |         |      |
| Bilbao,                  | 35 cks. | £156 |

|                            |      |     |
|----------------------------|------|-----|
| <b>Ammonium Phosphate—</b> |      |     |
| Adelaide,                  | 6 c. | £27 |

|                           |        |       |
|---------------------------|--------|-------|
| <b>Ammonium Sulphate—</b> |        |       |
| Hamburg,                  | 100 t. | £875  |
| Philadelphia,             | 50     | 435   |
| Berlice,                  | 105    | 1,050 |

|                    |            |      |
|--------------------|------------|------|
| <b>Basic Slag—</b> |            |      |
| Cape Town,         | 57 t. 3 c. | £145 |

|                            |            |     |
|----------------------------|------------|-----|
| <b>Bisulphite of Lime—</b> |            |     |
| Bombay,                    | 2 t. 14 c. | £44 |
| Calcutta,                  | 2 5        | 41  |

|               |            |     |
|---------------|------------|-----|
| <b>Borax—</b> |            |     |
| Adelaide,     | 2 t. 11 c. | £50 |

|                           |         |     |
|---------------------------|---------|-----|
| <b>Carbon Bisulphide—</b> |         |     |
| Adelaide,                 | 20 cts. | £22 |

|                           |          |     |
|---------------------------|----------|-----|
| <b>Carbonic Acid Gas—</b> |          |     |
| Jersey,                   | 33 tubes | £12 |

|                      |        |     |
|----------------------|--------|-----|
| <b>Caustic Soda—</b> |        |     |
| E. London,           | 7 c.   | £10 |
| Fremantle,           | 3      | 8   |
| Dunedin,             | 4      | 6   |
| Cape Town,           | 2 t. 8 | 47  |
| Natal,               | 18     | 18  |

|                                          |           |      |
|------------------------------------------|-----------|------|
| <b>Chemicals (otherwise undescribed)</b> |           |      |
| Brisbane,                                | 2 cs.     | £51  |
| Durban,                                  | 4         | 11   |
| Adelaide,                                | 10 kgs.   | 1 59 |
| Perth,                                   | 5         | 31   |
| Bombay,                                  | 1 ck.     | 1 19 |
| Lyttelton,                               | 5         | 28   |
| Melbourne,                               | 3 t. 4 c. | 1 10 |
| Ghent,                                   | 3         | 21   |
| Cape Town,                               | 5 drs.    | 24   |
| Rosario,                                 | 2 cks.    | 10   |

|                          |       |     |
|--------------------------|-------|-----|
| <b>Chloride of Lime—</b> |       |     |
| Cape Town,               | 18 c. | £22 |

|                     |              |      |
|---------------------|--------------|------|
| <b>Citric Acid—</b> |              |      |
| Rotterdam,          | 4 cks. 10 c. | £177 |
| Philadelphia,       | 1 t.         | 135  |
| Adelaide,           | 2            | 12   |
| Hioyo,              | 1            | 126  |
| Dusseldorf,         | 2            | 61   |
| Libau,              | 10           | 65   |
| Melbourne,          | 12           | 68   |
| Hamburg,            | 1 10         | 190  |

|                       |          |        |
|-----------------------|----------|--------|
| <b>Coal Products—</b> |          |        |
| <b>Anthracene</b>     |          |        |
| Dusseldorf,           | 268 cks. | £1,916 |
| <b>Benzol</b>         |          |        |
| Rotterdam,            | 37 runs. | £77    |
| <b>Carbolic Acid</b>  |          |        |
| Cape Town,            | 6 t.     | £60    |
| Dusseldorf,           | 40 cks.  | 321    |
| New York,             | 25       | 153    |
| <b>Naphtha</b>        |          |        |
| Sydney,               | 10 drs.  | £10    |
| <b>Tar</b>            |          |        |
| Algoa Bay,            | 120 drs. | £10    |

|                         |         |     |
|-------------------------|---------|-----|
| <b>Cream of Tartar—</b> |         |     |
| Natal,                  | 4 c.    | £18 |
| Dunedin,                | 2 kgs.  | 12  |
| Adelaide,               | 2 t. 10 | 244 |
| Sydney,                 | 2 10    | 248 |

|                       |           |      |
|-----------------------|-----------|------|
| <b>Disinfectants—</b> |           |      |
| Natal,                | 7 t. 6 c. | £153 |
| Hamburg,              | 25 cks.   | 125  |
| Colombo,              | 4 cs.     | 17   |
| Bri-bane,             | 5         | 10   |
| Delagoa Bay,          | 30 pkgs.  | 43   |
| Penang,               | 100 drs.  | 35   |
| Antigua,              | 10        | 15   |
| Yokohama,             | 50        | 21   |

|                |              |        |
|----------------|--------------|--------|
| <b>Manure—</b> |              |        |
| Morlaix,       | 154 t. 15 c. | £1,388 |
| Demerara,      | 50           | 465    |
| Trinidad,      | 25           | 250    |
| Grenada,       | 10           | 80     |
| Berlice,       | 20           | 180    |
| Jersey,        | 85 3         | 590    |
| Guadeloupe,    | 509 17       | 5,100  |

|                     |       |     |
|---------------------|-------|-----|
| <b>Oxalic Acid—</b> |       |     |
| Adelaide,           | 14 c. | £23 |
| Calcutta,           | 12    | 23  |
| Rotterdam,          | 7     | 11  |

|                   |       |     |
|-------------------|-------|-----|
| <b>Phosphate—</b> |       |     |
| Natal,            | 10 t. | £21 |

|                    |       |     |
|--------------------|-------|-----|
| <b>Phosphorus—</b> |       |     |
| Hobart,            | 5 cs. | £48 |

|                |            |      |
|----------------|------------|------|
| <b>Potash—</b> |            |      |
| Treport,       | 5 t. 15 c. | £250 |

|                      |           |      |
|----------------------|-----------|------|
| <b>Potash Salts—</b> |           |      |
| Adelaide,            | 2 t. 3 c. | £273 |

|                               |           |     |
|-------------------------------|-----------|-----|
| <b>Potassium Bicarbonate—</b> |           |     |
| New York,                     | 1 t. 3 c. | £29 |

|                              |      |     |
|------------------------------|------|-----|
| <b>Potassium Bichromate—</b> |      |     |
| Dunedin,                     | 6 c. | £16 |

|                              |      |     |
|------------------------------|------|-----|
| <b>Potassium Bitartrate—</b> |      |     |
| Natal,                       | 2 c. | £12 |

|                           |       |     |
|---------------------------|-------|-----|
| <b>Potassium Bromide—</b> |       |     |
| Bombay,                   | 1 cs. | £19 |

|                            |      |     |
|----------------------------|------|-----|
| <b>Potassium Chlorate—</b> |      |     |
| B. Ayres,                  | 9 c. | £20 |

|                            |            |      |
|----------------------------|------------|------|
| <b>Potassium Chloride—</b> |            |      |
| Mauritius,                 | 15 t. 5 c. | £142 |

|                           |            |     |
|---------------------------|------------|-----|
| <b>Potassium Cyanide—</b> |            |     |
| Bombay,                   | 5 cks.     | £23 |
| New York,                 | 30 cs.     | 217 |
| Algoa Bay,                | 6 t. 10 c. | 924 |

|                             |         |     |
|-----------------------------|---------|-----|
| <b>Potassium Prussiate—</b> |         |     |
| Montreal,                   | 10 cks. | £76 |

|                   |       |     |
|-------------------|-------|-----|
| <b>Salt Cake—</b> |       |     |
| Ghent,            | 70 t. | £60 |

|                   |            |     |
|-------------------|------------|-----|
| <b>Saltpetre—</b> |            |     |
| Santos,           | 1 t. 11 c. | £36 |
| Rio de Janeiro,   | 16 18      | 393 |
| Bahia,            | 3 17       | 91  |
| Syria,            | 2 1        | 44  |
| Oporto,           | 2          | 41  |
| Newcastle,        | 10         | 11  |

|                   |            |       |
|-------------------|------------|-------|
| <b>Sheep Dip—</b> |            |       |
| M. Video,         | 1 t. 12 c. | £500  |
| B. Ayres,         | 103 8      | 2,495 |

|                        |       |     |
|------------------------|-------|-----|
| <b>Silver Nitrate—</b> |       |     |
| Bombay,                | 3 cs. | £77 |

|              |       |    |
|--------------|-------|----|
| <b>Soda—</b> |       |    |
| Pelotas,     | 13 c. | £7 |
| Treport,     | 4 t.  | 12 |

|                  |           |     |
|------------------|-----------|-----|
| <b>Soda Ash—</b> |           |     |
| Amsterdam,       | 2 t. 2 c. | £17 |

|                       |            |     |
|-----------------------|------------|-----|
| <b>Soda Crystals—</b> |            |     |
| Adelaide,             | 11 t. 2 c. | £24 |

|                         |            |      |
|-------------------------|------------|------|
| <b>Sodium Arsenate—</b> |            |      |
| Algoa Bay,              | 17 t. 4 c. | £383 |

|                            |         |    |
|----------------------------|---------|----|
| <b>Sodium Bicarbonate—</b> |         |    |
| Calcutta,                  | 20 kgs. | £8 |

|                       |           |     |
|-----------------------|-----------|-----|
| <b>Sodium Borate—</b> |           |     |
| Hamburg,              | 1 t. 1 c. | £20 |

|                         |       |     |
|-------------------------|-------|-----|
| <b>Sodium Sulphate—</b> |       |     |
| Ghent,                  | 70 t. | £70 |

|                 |            |     |
|-----------------|------------|-----|
| <b>Sulphur—</b> |            |     |
| Barbadoes,      | 3 t. 15 c. | £24 |
| Newcastle,      | 3          | 23  |

|                        |        |     |
|------------------------|--------|-----|
| <b>Sulphuric Acid—</b> |        |     |
| Aden,                  | 20 cs. | £16 |

|                        |           |      |
|------------------------|-----------|------|
| <b>Superphosphate—</b> |           |      |
| Bilbao,                | 50 t.     | £190 |
| Mauritius,             | 223       | 808  |
| Landerneau,            | 114 17 c. | 345  |
| Lisbon,                | 15 6      | 62   |

|                       |            |      |
|-----------------------|------------|------|
| <b>Tartaric Acid—</b> |            |      |
| Adelaide,             | 1 t. 10 c. | £423 |
| Sydney,               | 2 10       | 256  |
| Brisbane,             | 3          | 17   |

|                      |           |      |
|----------------------|-----------|------|
| <b>Tin Crystals—</b> |           |      |
| Barbadoes,           | 3 t. 6 c. | £117 |

**LIVERPOOL.**

Week ending December 25th.

|                     |            |    |
|---------------------|------------|----|
| <b>Acetic Acid—</b> |            |    |
| Tampico,            | 19 c. 3 q. | £8 |

|                 |            |     |
|-----------------|------------|-----|
| <b>Albumen—</b> |            |     |
| Boston,         | 2 t. 10 c. | £30 |

|              |                |     |
|--------------|----------------|-----|
| <b>Alum—</b> |                |     |
| Melbourne,   | 5 t. 1 c. 3 q. | £23 |
| Mogador,     | 5 10           | 25  |
| Syria,       | 6 19 1         | 33  |
| Rabat,       | 7 11 2         | 34  |
| Calcutta,    | 18 19          | 96  |

|                        |      |     |
|------------------------|------|-----|
| <b>Aluminous Cake—</b> |      |     |
| Melbourne,             | 5 t. | £14 |

|                          |            |     |
|--------------------------|------------|-----|
| <b>Ammonia (Liquid)—</b> |            |     |
| New York,                | 13 c. 3 q. | £13 |

|                            |      |    |
|----------------------------|------|----|
| <b>Ammonium Carbonate—</b> |      |    |
| Genoa,                     | 6 c. | £7 |

|                           |         |          |
|---------------------------|---------|----------|
| <b>Ammonium Chloride—</b> |         |          |
| Stettin,                  | 11 c.   | £20      |
| Philadelphia,             | 18 t. 1 | 2 q. 434 |
| Syria,                    | 5       | 10       |
| Trieste,                  | 2 5     | 21       |
| Bombay,                   | 1 10    | 54       |

|                           |           |          |
|---------------------------|-----------|----------|
| <b>Ammonium Sulphate—</b> |           |          |
| Palermo,                  | 2 t. 8 c. | 3 q. £22 |
| Honolulu,                 | 81 19     | 1 240    |
| Boston,                   | 101       | 975      |
| Demerara,                 | 225 5     | 3 1,192  |
| Genoa,                    | 8 7       | 2 71     |
| Reval,                    | 10 8      | 2 95     |
| Baltimore,                | 74 12     | 2 732    |
| Valencia,                 | 120 18    | 3 1,094  |
| Alicante,                 | 20 13     | 2 175    |
| Las Palmas,               | 72 5      | 3 653    |

|                           |      |    |
|---------------------------|------|----|
| <b>Anhydrous Ammonia—</b> |      |    |
| Lisbon,                   | 3 q. | £5 |

|                 |            |          |
|-----------------|------------|----------|
| <b>Arsenic—</b> |            |          |
| St. John, N.B., | 9 t. 11 c. | £152     |
| Portland, M.,   | 7 6        | 2 q. 120 |

|                  |       |  |
|------------------|-------|--|
| <b>Asbestos—</b> |       |  |
| Bilbao,          | 2 cs. |  |
| Santander,       | 1     |  |
| Teneriffe,       | 1 ble |  |

|                         |      |     |
|-------------------------|------|-----|
| <b>Barium Chlorate—</b> |      |     |
| Genoa,                  | 5 c. | £20 |

|                          |  |  |
|--------------------------|--|--|
| <b>Bleaching Powder—</b> |  |  |
|--------------------------|--|--|



|                                   |                      |                                |                                 |                    |
|-----------------------------------|----------------------|--------------------------------|---------------------------------|--------------------|
| Madeira, 70                       | Manure—              | Barbadoes, 19 t. 2 c. 1 q. £48 | Sheep Dip—                      | Marseilles, 86     |
| Matanzas, 60                      | Valencia, 71 4 1 190 | Marseilles, 80 6 363           | Sandy Point, 1 t. 9 c. 3 q. £45 | N. Orleans, 250 75 |
| Monterey, 4                       | Melbourne, 20        | Melbourne, 20                  | B. Ayres, 11 15 405             | Newport News, 135  |
| Naples, 65                        |                      |                                | M. Video, 4 5 3 100             | Para, 10           |
| Newport N., 1,161                 |                      |                                |                                 | Tampico, 15        |
| New York, 130                     |                      |                                |                                 | Toronto, 20        |
| Pernambuco, 50                    |                      |                                |                                 |                    |
| Philadelphia, 15                  |                      |                                |                                 |                    |
| Portland, Or., 200                |                      |                                |                                 |                    |
| Progresso, 25                     |                      |                                |                                 |                    |
| Rio de Janeiro, 20                |                      |                                |                                 |                    |
| Saltilla, 40                      |                      |                                |                                 |                    |
| Samarang, 25                      |                      |                                |                                 |                    |
| San Francisco, 50                 |                      |                                |                                 |                    |
| Seville, 50                       |                      |                                |                                 |                    |
| Sourabaya, 25                     |                      |                                |                                 |                    |
| Talcahuano, 30                    |                      |                                |                                 |                    |
| Valencia, 50                      |                      |                                |                                 |                    |
| Valparaiso, 605                   |                      |                                |                                 |                    |
| Yokohama, 118                     |                      |                                |                                 |                    |
| Antwerp, 30                       |                      |                                |                                 |                    |
| Chemicals (otherwise undescrbed)  |                      |                                |                                 |                    |
| Hamburg, 1 t. £33                 |                      |                                |                                 |                    |
| Danzig, 5 c. 9                    |                      |                                |                                 |                    |
| Konigsb rg, 18 33                 |                      |                                |                                 |                    |
| Syria, 12 22                      |                      |                                |                                 |                    |
| Trieste, 1 33                     |                      |                                |                                 |                    |
| Venice, 2 68                      |                      |                                |                                 |                    |
| Stettin, 1 4 37                   |                      |                                |                                 |                    |
| Veile, 1 31                       |                      |                                |                                 |                    |
| New York, 16 5 615                |                      |                                |                                 |                    |
| Riga, 1 5 30                      |                      |                                |                                 |                    |
| Calcutta, 12 6 2 q. 90            |                      |                                |                                 |                    |
| China Clay—                       |                      |                                |                                 |                    |
| Bombay, 140 cks.                  |                      |                                |                                 |                    |
| Boston, 1,107 t.                  |                      |                                |                                 |                    |
| Calcutta, 4                       |                      |                                |                                 |                    |
| Philadelphia, 148                 |                      |                                |                                 |                    |
| Coal Products—                    |                      |                                |                                 |                    |
| Aniline Salts                     |                      |                                |                                 |                    |
| St. Nazaire, 30 cks.              |                      |                                |                                 |                    |
| New York, 20 cs.                  |                      |                                |                                 |                    |
| Cresote Oil                       |                      |                                |                                 |                    |
| Lisbon, 200 brls.                 |                      |                                |                                 |                    |
| Naphthaline                       |                      |                                |                                 |                    |
| Antwerp, 20 t. 12 c.              |                      |                                |                                 |                    |
| Pitch                             |                      |                                |                                 |                    |
| Marseilles, 161 t. 10 c.          |                      |                                |                                 |                    |
| Tar                               |                      |                                |                                 |                    |
| Accra, 12 brls.                   |                      |                                |                                 |                    |
| Tar Salts                         |                      |                                |                                 |                    |
| New York, 17 cks.                 |                      |                                |                                 |                    |
| Cod Oil—                          |                      |                                |                                 |                    |
| Maranham, 7 dms.                  |                      |                                |                                 |                    |
| Copperas —                        |                      |                                |                                 |                    |
| Oporto, 5 t. 3 c. £17             |                      |                                |                                 |                    |
| Copper Sulphate —                 |                      |                                |                                 |                    |
| Ghent, 1 t. 13 c. 3 q. £27        |                      |                                |                                 |                    |
| St. John's, N'd., 14 3 11         |                      |                                |                                 |                    |
| Malta, 5 85                       |                      |                                |                                 |                    |
| Catania, 5 1 80                   |                      |                                |                                 |                    |
| Leghorn, 19 16 2 343              |                      |                                |                                 |                    |
| Victoria, B.C., 2 33              |                      |                                |                                 |                    |
| Santos, 4 19 84                   |                      |                                |                                 |                    |
| Ma seilles, 122 3 1 1,890         |                      |                                |                                 |                    |
| Varna, 1 5 20                     |                      |                                |                                 |                    |
| Algiers, 34 1 546                 |                      |                                |                                 |                    |
| M. Video, 10 16 172               |                      |                                |                                 |                    |
| Cette, 444 4 7,106                |                      |                                |                                 |                    |
| Cadix, 5 4 2 82                   |                      |                                |                                 |                    |
| Genoa, 5 1 3 83                   |                      |                                |                                 |                    |
| Bona, 81 3 3 1,296                |                      |                                |                                 |                    |
| Auckland, 1 17                    |                      |                                |                                 |                    |
| Bombay, 7 10 119                  |                      |                                |                                 |                    |
| Bordeaux, 83 5 3 1,240            |                      |                                |                                 |                    |
| Tampico, 6 5                      |                      |                                |                                 |                    |
| Copenhagen, 1 16                  |                      |                                |                                 |                    |
| Vera Cruz, 1 3 1 21               |                      |                                |                                 |                    |
| Disinfectants—                    |                      |                                |                                 |                    |
| Colombo, 10 dms. 8 cks. £17       |                      |                                |                                 |                    |
| Rangoon, 20 8                     |                      |                                |                                 |                    |
| Bombay, 2 t. 7 c. 3 q. 35         |                      |                                |                                 |                    |
| Dried Blood—                      |                      |                                |                                 |                    |
| Teneriffe, 9 t. 10 c. £70         |                      |                                |                                 |                    |
| Gelatine—                         |                      |                                |                                 |                    |
| New York, 100 bxs.                |                      |                                |                                 |                    |
| Glue—                             |                      |                                |                                 |                    |
| St. John, N.B., 800 hgs.          |                      |                                |                                 |                    |
| Gypsum—                           |                      |                                |                                 |                    |
| Oporto, 10 t. 2 c. £23            |                      |                                |                                 |                    |
| Hydrochloric Acid—                |                      |                                |                                 |                    |
| San Juan, 1 t. £16                |                      |                                |                                 |                    |
| Lead Acetate—                     |                      |                                |                                 |                    |
| Naples, 2 t. 2 c. £54             |                      |                                |                                 |                    |
| Litharge—                         |                      |                                |                                 |                    |
| Oporto, 1 t. 5 c.                 |                      |                                |                                 |                    |
| Magnesium Chloride—               |                      |                                |                                 |                    |
| Genoa, 11 c. 2 q. £8              |                      |                                |                                 |                    |
| Magnesium Sulphate—               |                      |                                |                                 |                    |
| Port Natal, 20 cs.                |                      |                                |                                 |                    |
| Manure—                           |                      |                                |                                 |                    |
| Barbadoes, 19 t. 2 c. 1 q. £48    |                      |                                |                                 |                    |
| Valencia, 71 4 1 190              |                      |                                |                                 |                    |
| Marseilles, 80 6 363              |                      |                                |                                 |                    |
| Melbourne, 20                     |                      |                                |                                 |                    |
| Metallic Sodium—                  |                      |                                |                                 |                    |
| Hamburg, 1 t. 10 c. £199          |                      |                                |                                 |                    |
| Ochre—                            |                      |                                |                                 |                    |
| Rio de Janeiro, 20 brls.          |                      |                                |                                 |                    |
| Paint—                            |                      |                                |                                 |                    |
| B. Ayres, 10 dms.                 |                      |                                |                                 |                    |
| Calcutta, 7 cks.                  |                      |                                |                                 |                    |
| Havana, 24 cs. 2                  |                      |                                |                                 |                    |
| Havre, 5                          |                      |                                |                                 |                    |
| Larnaca, 1 1                      |                      |                                |                                 |                    |
| New York, 8 62 kgs.               |                      |                                |                                 |                    |
| Onitsha, 18                       |                      |                                |                                 |                    |
| P'mam'co, 4t                      |                      |                                |                                 |                    |
| Pt. Natal, 145 100                |                      |                                |                                 |                    |
| Porto Novo, 60                    |                      |                                |                                 |                    |
| San Francisco, 23                 |                      |                                |                                 |                    |
| Sapeli, 1                         |                      |                                |                                 |                    |
| Sierra Leone, 2                   |                      |                                |                                 |                    |
| Tampico, 4 cs 50 20               |                      |                                |                                 |                    |
| Trinidad, 75                      |                      |                                |                                 |                    |
| Valparaiso, 31 105                |                      |                                |                                 |                    |
| Vera Cruz, 5                      |                      |                                |                                 |                    |
| Caldera, 165                      |                      |                                |                                 |                    |
| Callao, 7                         |                      |                                |                                 |                    |
| Coronel, 6                        |                      |                                |                                 |                    |
| Hamburg, 36 3                     |                      |                                |                                 |                    |
| Jaffa, 3                          |                      |                                |                                 |                    |
| Manaos, 2                         |                      |                                |                                 |                    |
| Old Calabar, 54                   |                      |                                |                                 |                    |
| St. John's, N'd., 2               |                      |                                |                                 |                    |
| Sherbro, 1 cs.                    |                      |                                |                                 |                    |
| Painters' Colours—                |                      |                                |                                 |                    |
| Boca, 1 cs. 1 ck. 8 kgs. 20 brls. |                      |                                |                                 |                    |
| Bombay, 10 285                    |                      |                                |                                 |                    |
| Boston, 1 3                       |                      |                                |                                 |                    |
| B. Ayres, 1 ble. 60 34            |                      |                                |                                 |                    |
| Ceara, 20 dms.                    |                      |                                |                                 |                    |
| Champerico 2 cs. 4 brls. 10       |                      |                                |                                 |                    |
| E. London, 1 ck.                  |                      |                                |                                 |                    |
| Iquique, 7                        |                      |                                |                                 |                    |
| La Guayra, 12 5 brls.             |                      |                                |                                 |                    |
| Lisbon, 3                         |                      |                                |                                 |                    |
| Manaos, 3 5                       |                      |                                |                                 |                    |
| Maranham, 20                      |                      |                                |                                 |                    |
| Melbourne, 2                      |                      |                                |                                 |                    |
| M. Video, 30 2                    |                      |                                |                                 |                    |
| New York, 30 2                    |                      |                                |                                 |                    |
| Para, 100 dms. 65 3               |                      |                                |                                 |                    |
| 4 hds. 4 tcs.                     |                      |                                |                                 |                    |
| San Juan, 2 3 196 5               |                      |                                |                                 |                    |
| Talcahuano, 100                   |                      |                                |                                 |                    |
| Vera Cruz, 100                    |                      |                                |                                 |                    |
| Wellington, N.Z., 2               |                      |                                |                                 |                    |
| Havana, 2 tcs.                    |                      |                                |                                 |                    |
| Newport News, 115 35              |                      |                                |                                 |                    |
| Pisco, 10 cs. 8                   |                      |                                |                                 |                    |
| Rio de Janeiro, 8                 |                      |                                |                                 |                    |
| Phosphate—                        |                      |                                |                                 |                    |
| Las Palmas, 5 t. £13              |                      |                                |                                 |                    |
| Phosphorus—                       |                      |                                |                                 |                    |
| Hiogo, 2 t. 15 c. £638            |                      |                                |                                 |                    |
| Plumbago—                         |                      |                                |                                 |                    |
| Pernambuco, 15 c. 6 cs.           |                      |                                |                                 |                    |
| Tampico, 6 cs.                    |                      |                                |                                 |                    |
| Potassium Chlorate—               |                      |                                |                                 |                    |
| Vera Cruz, 1 t. £40               |                      |                                |                                 |                    |
| Oporto, 1 t. 3 c. 6               |                      |                                |                                 |                    |
| Montreal, 10 20                   |                      |                                |                                 |                    |
| Konigsberg, 1 40                  |                      |                                |                                 |                    |
| Boston, 1 5 58                    |                      |                                |                                 |                    |
| Antwerp, 1 47                     |                      |                                |                                 |                    |
| Rosin Oil—                        |                      |                                |                                 |                    |
| St. John's, N.B., 5 brls.         |                      |                                |                                 |                    |
| Salt—                             |                      |                                |                                 |                    |
| Amsterdam, 100 t.                 |                      |                                |                                 |                    |
| Barbadoes, 50                     |                      |                                |                                 |                    |
| Bonny, 7                          |                      |                                |                                 |                    |
| Boston, 100                       |                      |                                |                                 |                    |
| Calcutta, 1,742                   |                      |                                |                                 |                    |
| E. London, 1 6 c.                 |                      |                                |                                 |                    |
| Egwanga, 84                       |                      |                                |                                 |                    |
| Honolulu, 35 14                   |                      |                                |                                 |                    |
| Malta, 2 11                       |                      |                                |                                 |                    |
| New York, 37                      |                      |                                |                                 |                    |
| Portland, Me., 700                |                      |                                |                                 |                    |
| Pt. Natal, 86                     |                      |                                |                                 |                    |
| Rio de Janeiro, 10                |                      |                                |                                 |                    |
| Rotterdam, 300                    |                      |                                |                                 |                    |
| San Francisco, 250                |                      |                                |                                 |                    |
| Sierra Leone, 50                  |                      |                                |                                 |                    |
| Trinidad, 21 8                    |                      |                                |                                 |                    |
| Valparaiso, 10                    |                      |                                |                                 |                    |
| Vera Cruz, 10 10                  |                      |                                |                                 |                    |
| Winnebah, 2 10                    |                      |                                |                                 |                    |
| Abonnema, 20                      |                      |                                |                                 |                    |
| Antwerp, 819 8                    |                      |                                |                                 |                    |
| Matadi, 8                         |                      |                                |                                 |                    |
| Saltpetre—                        |                      |                                |                                 |                    |
| Para, 15 c. £16                   |                      |                                |                                 |                    |
| Soap—                             |                      |                                |                                 |                    |
| Algoa Bay, 50 bxs.                |                      |                                |                                 |                    |
| Ambayna, 1,000                    |                      |                                |                                 |                    |
| Barbadoes, 1,225                  |                      |                                |                                 |                    |
| Bombay, 510                       |                      |                                |                                 |                    |
| Callao, 4 cs.                     |                      |                                |                                 |                    |
| Canaria, 680                      |                      |                                |                                 |                    |
| Cape Town, 4,783                  |                      |                                |                                 |                    |
| Cartagena, N.G., 50               |                      |                                |                                 |                    |
| Colombo, 505                      |                      |                                |                                 |                    |
| Copenhagen, 60                    |                      |                                |                                 |                    |
| Delagoa Bay, 2,112                |                      |                                |                                 |                    |
| Durban, 281                       |                      |                                |                                 |                    |
| E. London, 1,257                  |                      |                                |                                 |                    |
| Gibraltar, 451                    |                      |                                |                                 |                    |
| Half Jack, 107                    |                      |                                |                                 |                    |
| Honolulu, 50                      |                      |                                |                                 |                    |
| Kingston Ja., 1,985               |                      |                                |                                 |                    |
| Laos, 56                          |                      |                                |                                 |                    |
| Las Palmas, 52                    |                      |                                |                                 |                    |
| Malta, 30                         |                      |                                |                                 |                    |
| Mannos, 450                       |                      |                                |                                 |                    |
| Matanzas, 25                      |                      |                                |                                 |                    |
| Mauritius, 1,500                  |                      |                                |                                 |                    |
| Menada, 1,000                     |                      |                                |                                 |                    |
| N. Orleans, 200                   |                      |                                |                                 |                    |
| New York, 960 38 10 cks.          |                      |                                |                                 |                    |
| 300 pkgs.                         |                      |                                |                                 |                    |
| Para, 300 2                       |                      |                                |                                 |                    |
| Penang, 80                        |                      |                                |                                 |                    |
| Pt. Elizabeth, 3,301              |                      |                                |                                 |                    |
| Portland, Me., 1                  |                      |                                |                                 |                    |
| Pt. Natal, 190 25                 |                      |                                |                                 |                    |
| Pram Pram, 1,000                  |                      |                                |                                 |                    |
| Rangoon, 1,000                    |                      |                                |                                 |                    |
| Rio de Janeiro, 2                 |                      |                                |                                 |                    |
| St. John's, N'd., 300             |                      |                                |                                 |                    |
| St. Louis, 175                    |                      |                                |                                 |                    |
| Savanilla, 9,664                  |                      |                                |                                 |                    |
| Shanghai, 250                     |                      |                                |                                 |                    |
| Sierra Leone, 372 10              |                      |                                |                                 |                    |
| Singapore, 1,255 1                |                      |                                |                                 |                    |
| Teneriffe, 16                     |                      |                                |                                 |                    |
| Valparaiso, 100                   |                      |                                |                                 |                    |
| Warri, 50                         |                      |                                |                                 |                    |
| Addah, 2,545                      |                      |                                |                                 |                    |
| Algiers, 190                      |                      |                                |                                 |                    |
| Appam, 232                        |                      |                                |                                 |                    |
| Bathurst, 400                     |                      |                                |                                 |                    |
| Hong Kong, 501                    |                      |                                |                                 |                    |
| Moisel Bay, 501                   |                      |                                |                                 |                    |
| Soda—                             |                      |                                |                                 |                    |
| Maranham, 8 cks.                  |                      |                                |                                 |                    |
| Soda Alkali—                      |                      |                                |                                 |                    |
| Odessa, 100 brls.                 |                      |                                |                                 |                    |
| Soda Ash—                         |                      |                                |                                 |                    |
| Barcelona, 30 cks.                |                      |                                |                                 |                    |
| Boston, 75 800 bgs.               |                      |                                |                                 |                    |
| B. Ayres, 200 brls.               |                      |                                |                                 |                    |
| Calcutta, 111 290 kgs.            |                      |                                |                                 |                    |
| Callao, 118                       |                      |                                |                                 |                    |
| Constantinople, 81 86             |                      |                                |                                 |                    |
| Dunedin, 50                       |                      |                                |                                 |                    |
| Genoa, 15                         |                      |                                |                                 |                    |
| Hamburg, 245                      |                      |                                |                                 |                    |
| Kobe, 17                          |                      |                                |                                 |                    |
| Las Palmas, 42                    |                      |                                |                                 |                    |
| N. Orleans, 25 tcs.               |                      |                                |                                 |                    |
| New York, 72 400                  |                      |                                |                                 |                    |
| Pernambuco, 50 brls.              |                      |                                |                                 |                    |
| Philadelpia, 97                   |                      |                                |                                 |                    |
| Rio de Janeiro, 300               |                      |                                |                                 |                    |
| Singapore, 10                     |                      |                                |                                 |                    |
| Venice, 10                        |                      |                                |                                 |                    |
| Palermo, 150                      |                      |                                |                                 |                    |
| San Francisco, 70 150             |                      |                                |                                 |                    |
| Soda Crystals—                    |                      |                                |                                 |                    |
| Boston, 476 brls.                 |                      |                                |                                 |                    |
| Calcutta, 30 33 kgs.              |                      |                                |                                 |                    |
| Honolulu, 10 40                   |                      |                                |                                 |                    |
| Kingston, Jam, 11 cks.            |                      |                                |                                 |                    |
| Philadelpia, 336                  |                      |                                |                                 |                    |
| Rottterdam, 50                    |                      |                                |                                 |                    |
| St. John's, N'd., 100 bgs.        |                      |                                |                                 |                    |
| Sourabaya, 180                    |                      |                                |                                 |                    |
| Talcahuano, 50                    |                      |                                |                                 |                    |
| Bilbao, 9 cks.                    |                      |                                |                                 |                    |
| Sodium Bicarbonate—               |                      |                                |                                 |                    |
| Algoa Bay, 40 kgs.                |                      |                                |                                 |                    |
| Batavia, 20                       |                      |                                |                                 |                    |
| Calcutta, 1,050                   |                      |                                |                                 |                    |
| Cape Town, 20                     |                      |                                |                                 |                    |
| Cartagena, N.G., 40               |                      |                                |                                 |                    |
| Colombo, 8 cks.                   |                      |                                |                                 |                    |
| Constantinople, 20                |                      |                                |                                 |                    |
| Dunedin, 710                      |                      |                                |                                 |                    |
| Genoa, 150                        |                      |                                |                                 |                    |
| Hamburg, 10 5 brls.               |                      |                                |                                 |                    |
| Marseilles, 86                    |                      |                                |                                 |                    |
| N. Orleans, 250 75                |                      |                                |                                 |                    |
| Newport News, 135                 |                      |                                |                                 |                    |
| Para, 10                          |                      |                                |                                 |                    |
| Tampico, 15                       |                      |                                |                                 |                    |
| Toronto, 20                       |                      |                                |                                 |                    |
| Sodium Chlorate—                  |                      |                                |                                 |                    |
| Hamburg, 35 brls.                 |                      |                                |                                 |                    |
| Rotterdam, 10 kgs.                |                      |                                |                                 |                    |
| Sodium Silicate—                  |                      |                                |                                 |                    |
| Bilbao, 39 cks.                   |                      |                                |                                 |                    |
| Constantinople, 40 4 brls.        |                      |                                |                                 |                    |
| Malaga, 22                        |                      |                                |                                 |                    |
| N. Orleans, 22                    |                      |                                |                                 |                    |
| Oporto, 10                        |                      |                                |                                 |                    |
| Smyna, 40                         |                      |                                |                                 |                    |
| Sydney, 17                        |                      |                                |                                 |                    |
| Sodium Sulphate—                  |                      |                                |                                 |                    |
| Boston, 290 lgs.                  |                      |                                |                                 |                    |
| Rosario, 21 cks.                  |                      |                                |                                 |                    |
| Starch—                           |                      |                                |                                 |                    |
| Copenhagen, 4 cks. 4 bgs.         |                      |                                |                                 |                    |
| Stearine—                         |                      |                                |                                 |                    |
| Savanilla, 50 cs.                 |                      |                                |                                 |                    |
| Maranham, 6 bgs.                  |                      |                                |                                 |                    |
| Sulphate of Lime—                 |                      |                                |                                 |                    |
| Madeira, 2 t.                     |                      |                                |                                 |                    |
| Sulphur—                          |                      |                                |                                 |                    |
| Calcutta, 3 t.                    |                      |                                |                                 |                    |
| Portland, Or., 50 2 c.            |                      |                                |                                 |                    |
| Boston, 55 1 17                   |                      |                                |                                 |                    |
| Para, 10                          |                      |                                |                                 |                    |
| Sulphuric Acid—                   |                      |                                |                                 |                    |
| Maranham, 1 t. 2 c.               |                      |                                |                                 |                    |
| Superphosphate—                   |                      |                                |                                 |                    |
| Las Palmas, 22 t. 10 c.           |                      |                                |                                 |                    |
| Madeira, 2                        |                      |                                |                                 |                    |
| Tartaric Acid—                    |                      |                                |                                 |                    |
| Callao, 1 c.                      |                      |                                |                                 |                    |
| Treacle—                          |                      |                                |                                 |                    |
| Malta, 15 cs.                     |                      |                                |                                 |                    |
| Rotterdam, 10 brls.               |                      |                                |                                 |                    |
| Antwerp, 6 hf.-pns.               |                      |                                |                                 |                    |
| Ghent, 20                         |                      |                                |                                 |                    |
| Turpentine—                       |                      |                                |                                 |                    |
| Champerico, 2 cs. 20 dms.         |                      |                                |                                 |                    |
| Yarnish—                          |                      |                                |                                 |                    |
| Melbourne, 16 cs.                 |                      |                                |                                 |                    |



**Chemicals (otherwise undes.)—**

|              |                    |
|--------------|--------------------|
| Amsterdam,   | 34 pks.            |
| Antwerp,     | 2 cks. 4 cs.       |
| Bremen,      | 6                  |
| Christiania, | 2 040 silbs. 2     |
| Copenhagen,  | 11 cks. 2          |
| Danzig,      | 11                 |
| Drontheim,   | 336 silbs. 11 pks. |
| Gothenburg,  | 65 cks. 47         |
| Hamburg,     | 21                 |
| Harlingen,   | 20                 |
| Hango,       | 1                  |
| Konigsberg,  | 4                  |
| Norrköping,  | 5 pks.             |
| New York,    | 25                 |
| Rotterdam,   | 24 106             |
| Stettin,     | 14 307 pks.        |

**Cottonseed Oil—**

|              |        |
|--------------|--------|
| Amsterdam,   | 498 c. |
| Antwerp,     | 1,774  |
| Christiania, | 17     |
| Copenhagen,  | 34     |
| Danzig,      | 49     |
| Dunkirk,     | 102    |
| Drontheim,   | 34     |
| Gothenburg,  | 100    |
| Hamburg,     | 503    |
| Rotterdam,   | 1,156  |

**Creosote—**

|          |          |
|----------|----------|
| Antwerp, | 40 brls. |
|----------|----------|

**Dyestuffs (otherwise undescribed)**

|           |             |
|-----------|-------------|
| Antwerp,  | 1 ck. 1 cs. |
| Danzig,   | 25          |
| New York, | 2           |
| Reval,    | 8 pks.      |
| Riga,     | 1 kg. 1     |
| Stettin,  | 1 kg. 1     |

**Glue—**

|           |        |
|-----------|--------|
| Antwerp,  | 2 bgs. |
| New York, | 6 cks. |

**Linseed Oil—**

|                |       |
|----------------|-------|
| Amsterdam,     | 99 c. |
| Bergen,        | 28    |
| Christiania,   | 17    |
| Copenhagen,    | 7     |
| Christiansand, | 57    |
| Christiansund, | 18    |
| Hamburg,       | 387   |
| Rotterdam,     | 203   |
| Stavanger,     | 21    |

**Manure—**

|          |          |
|----------|----------|
| Dunkirk, | 404 sks. |
|----------|----------|

**Mineral White—**

|         |         |
|---------|---------|
| Danzig, | 10 bgs. |
|---------|---------|

**Naphtha—**

|             |        |
|-------------|--------|
| Copenhagen, | 6 cks. |
|-------------|--------|

**Paint—**

|         |       |
|---------|-------|
| Bergen, | 1 ck. |
|---------|-------|

**Painters' Colours—**

|              |                |
|--------------|----------------|
| Amsterdam,   | 3 cks.         |
| Antwerp,     | 37 49 pks.     |
| Bergen,      | 1 cs.          |
| Copenhagen,  | 4              |
| Hamburg,     | 85 3 20        |
| Helsingfors, | 5 dms. 20 pks. |
| Norrköping,  | 20             |
| Rotterdam,   | 90             |
| Stettin,     | 20 2 54        |
| Stockholm,   | 20             |

**Pitch—**

|             |        |
|-------------|--------|
| Antwerp,    | 250 t. |
| Copenhagen, | 25     |
| Dunkirk,    | 127    |
| Marseilles, | 689    |

**Slag—**

|          |          |
|----------|----------|
| Harburg, | 1,492 t. |
|----------|----------|

**Soap—**

|            |       |
|------------|-------|
| Bergen,    | 8 cs. |
| Stockholm, | 1     |

**Tallow—**

|            |        |
|------------|--------|
| Stockholm, | 5 cks. |
|------------|--------|

**Tar—**

|            |        |
|------------|--------|
| Rotterdam, | 6 cks. |
|------------|--------|

**Yarnish—**

|             |                      |
|-------------|----------------------|
| Antwerp,    | 2 cks. 3 cs. 10 dms. |
| Copenhagen, | 1                    |
| Gothenburg, | 1 2                  |
| Ghent,      | 3 2                  |
| Hamburg,    | 3 1                  |
| Norrköping, | 2 4                  |
| Stettin,    | 5                    |

**GLASGOW.**

Week ending December 26th.

**Acid—**

|           |     |
|-----------|-----|
| New York, | £31 |
|-----------|-----|

**Alum Cake—**

|          |     |
|----------|-----|
| Dunedin, | £32 |
|----------|-----|

**Ammonium Carbonate—**

|           |     |
|-----------|-----|
| Montreal, | £40 |
| Rangoon,  | 32  |

**Ammonium Sulphate—**

|          |                   |
|----------|-------------------|
| U.S.A.,  | 2 14 t. 15 1/4 c. |
| Hamburg, | 50 12             |

**Bleaching Powder—**

|           |          |
|-----------|----------|
| Auckland, | 11 c.    |
| Calcutta, | 20 t 18  |
| U.S.A.,   | 11       |
| Dunedin,  | 2 19 1/4 |

**Boiler Composition—**

|           |     |
|-----------|-----|
| Calcutta, | £27 |
|-----------|-----|

**Caustic Soda—**

|           |            |
|-----------|------------|
| B. Ayres, | 4 t. 10 c. |
| Dunedin,  | 8 17 1/4   |

**Coal Products—**

|               |             |
|---------------|-------------|
| Alizarine     | £67         |
| Aniline Dyes  | £24         |
| Aniline Salt  | £29         |
| Lisbon,       | £29         |
| Benzine       | £77         |
| France,       |             |
| Carbolic Acid | 6 t.        |
| Rotterdam,    | £2,000      |
| Creosote      | £46         |
| France,       |             |
| Creosote Oil  | £46         |
| Naphtha       | 26 t. 15 c. |
| Pitch         | £3,058      |
| Cette,        | 650         |
| France,       | 115         |
| U.S.A.,       | 328         |
| Venice,       |             |
| Havre,        | 415 t.      |
| Brindisi,     | 1,330       |
| Rangoon,      | £100        |
| Christiania,  | 88          |
| Russia,       |             |
| Tar and Pitch | £379        |
| Calcutta,     |             |
| Tar Oil       | 6 t.        |
| Rotterdam,    |             |

**Coal Products—**

|               |             |
|---------------|-------------|
| Alizarine     | £67         |
| Aniline Dyes  | £24         |
| Aniline Salt  | £29         |
| Lisbon,       | £29         |
| Benzine       | £77         |
| France,       |             |
| Carbolic Acid | 6 t.        |
| Rotterdam,    | £2,000      |
| Creosote      | £46         |
| France,       |             |
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| Naphtha       | 26 t. 15 c. |
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| Cette,        | 650         |
| France,       | 115         |
| U.S.A.,       | 328         |
| Venice,       |             |
| Havre,        | 415 t.      |
| Brindisi,     | 1,330       |
| Rangoon,      | £100        |
| Christiania,  | 88          |
| Russia,       |             |
| Tar and Pitch | £379        |
| Calcutta,     |             |
| Tar Oil       | 6 t.        |
| Rotterdam,    |             |

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|               |             |
|---------------|-------------|
| Alizarine     | £67         |
| Aniline Dyes  | £24         |
| Aniline Salt  | £29         |
| Lisbon,       | £29         |
| Benzine       | £77         |
| France,       |             |
| Carbolic Acid | 6 t.        |
| Rotterdam,    | £2,000      |
| Creosote      | £46         |
| France,       |             |
| Creosote Oil  | £46         |
| Naphtha       | 26 t. 15 c. |
| Pitch         | £3,058      |
| Cette,        | 650         |
| France,       | 115         |
| U.S.A.,       | 328         |
| Venice,       |             |
| Havre,        | 415 t.      |
| Brindisi,     | 1,330       |
| Rangoon,      | £100        |
| Christiania,  | 88          |
| Russia,       |             |
| Tar and Pitch | £379        |
| Calcutta,     |             |
| Tar Oil       | 6 t.        |
| Rotterdam,    |             |

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|               |             |
|---------------|-------------|
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| Aniline Dyes  | £24         |
| Aniline Salt  | £29         |
| Lisbon,       | £29         |
| Benzine       | £77         |
| France,       |             |
| Carbolic Acid | 6 t.        |
| Rotterdam,    | £2,000      |
| Creosote      | £46         |
| France,       |             |
| Creosote Oil  | £46         |
| Naphtha       | 26 t. 15 c. |
| Pitch         | £3,058      |
| Cette,        | 650         |
| France,       | 115         |
| U.S.A.,       | 328         |
| Venice,       |             |
| Havre,        | 415 t.      |
| Brindisi,     | 1,330       |
| Rangoon,      | £100        |
| Christiania,  | 88          |
| Russia,       |             |
| Tar and Pitch | £379        |
| Calcutta,     |             |
| Tar Oil       | 6 t.        |
| Rotterdam,    |             |

**Coal Products—**

|               |             |
|---------------|-------------|
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| Benzine       | £77         |
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| Carbolic Acid | 6 t.        |
| Rotterdam,    | £2,000      |
| Creosote      | £46         |
| France,       |             |
| Creosote Oil  | £46         |
| Naphtha       | 26 t. 15 c. |
| Pitch         | £3,058      |
| Cette,        | 650         |
| France,       | 115         |
| U.S.A.,       | 328         |
| Venice,       |             |
| Havre,        | 415 t.      |
| Brindisi,     | 1,330       |
| Rangoon,      | £100        |
| Christiania,  | 88          |
| Russia,       |             |
| Tar and Pitch | £379        |
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| Tar Oil       | 6 t.        |
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# THE CHEMICAL TRADE JOURNAL AND OIL, PAINT and COLOUR REVIEW.

Publishing Offices: 32, BLACKFRIARS STREET, MANCHESTER.

No. 451.

SATURDAY, JANUARY 11, 1895.

Vol. XVIII.

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## ANNUAL SPECIAL ISSUE, 1896.

The usual Double New Year Number of the CHEMICAL TRADE JOURNAL, to be issued on January 18th, 1896, will contain a number of illustrated technical articles, in addition to the other special features of this issue. Advertisers are requested to consult our advertising columns for further particulars.

SUBSCRIBERS and others will oblige by ordering extra copies as early as possible,

ESPECIALLY for the CONTINENT and ABROAD.

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**DAVIS BROS., 32, Blackfriars Street, MANCHESTER.**

Our Registered Telegraphic Address is—

**"Expert, Manchester."**

NATIONAL TELEPHONE 3060.

Readers will oblige by making their remittances for subscriptions by Postal or Post Office Order, crossed and payable to "Davis Bros."

Communications for the Editor, if intended for insertion in the current week's issue, should reach the office not later than **Tuesday morning.**

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Advertisements intended for insertion in the current week's issue should reach the office by **Thursday morning** at the latest.

## CURRENT TOPICS.

### THE SOLID PARAFFIN COMBINE.

IT is easy to prophesy, but it is not equally easy to do so rightly. At the same time a correct fulfilment of a prophecy is not always attended with complete satisfaction, for should the prophecy be an evil one, there is yet some consolation in the fact that the forecast has not been fulfilled. With regard to the Anglo-American Solid Paraffin Combine, though apparently very near the truth in the estimate which we made at the beginning of last year, we are nevertheless sorry that things should have gone so badly with this already heavily-weighted industry.

As we pointed out at the time, everything depended upon the candlemakers, they being the principal consumers, and it was easy to foresee difficulties when the prospects of the candlemakers adhering to their association were so slender. There cannot be the slightest doubt but that the Standard Oil Company were fully alive to the results that would follow the decadence of the association, and in counting thereon they did not run any very great risk.

It was not long before they began to see that things were going to fall flat, and it must have been with intense complacency that they reflected upon the successful way in which they had bribed the piper to cease playing the objectionable air of "The flash-point of petroleum to 100° must be raised," and yet so neatly contrived to burke the payment of the bribe. From beginning to end, the whole affair has been a hopeless mass of patchery, and we cannot but feel that the meetings which are to be held in London to bring together the producers and consumers, will be productive of very little good. It was openly stated in the American trade papers that on their side, at all events, there was no intention on the part of the trade to pay heed to any promises that the Standard Oil Company might be making to the Scotch wax producers, to close their mouths over the flash-point question. We presume that, had the Candlemakers' Association adhered to its original policy, the Standard Oil Company would have fulfilled their promises regarding the paraffin combine, and it only shows how confident they must have been of the issue, to enter into the agreement they did, in the face of the American trade.

There are a good many who have fully expected the latest developments, reported in the columns of our last issue, and a nice mess it has left the Scotch producers in. Looking at the matter calmly and impartially, what have they gained? It would be indeed a difficult matter to say. To our way of thinking, not only are they no better off, but, on the contrary they are, if possible, in a worse position than ever, for now they have the surplus stocks (for which there is no market, save at a poor price), which they have been counting on the Standard Oil Company taking up, in accordance with the terms of the agreement.



It is much easier to see how the Standard Oil Company have benefited. They have had a nice little boom with their dear and doubtful oil at the expense of the poor consumer, whom erstwhile they were so anxious to protect from any burdensome rise in price, through the substitution of Scotch or other paraffins for their low flash dangerous oil.

Seeing there is good reason to hope that a further inquiry into the question of what is a safe flashing point for burning oils will be made by a Parliamentary Committee during the coming Session, we would once again urge the Scotch producers to leave the Standard Company to fight their own battle, and reserve to themselves the right to speak if they wish to do so. To judge by the experience of the last 12 months, this assumption of independence can do no harm, for agreements as unstable as that which has just collapsed would, we think, be still open to negotiation, even if the Scotch producers did refuse for once to eat the leek.

#### THE LONDON ARBITRATION CHAMBER.

It must be very satisfactory to the originators of the London Chamber of Arbitration to find that the Chamber has done such good work during the past three years. There is not the slightest doubt, we think, that the object with which it was instituted has been, as a whole, satisfactorily achieved. It is true that it has not met with as full support as might reasonably have been expected, but it has, nevertheless, been sufficiently appreciated to prove that it was wanted.

In a large measure it has been handicapped by the new Commercial Court, which was practically the outcome of the competition between the Chamber and the law courts. We had occasion recently to refer to the progress which the Commercial Court was making, but we are of opinion that there are still many advantages in connection with the use of the Chamber of Arbitration in industrial disputes.

It appears that the average time occupied in the disposal of the cases which have been heard in the Chamber has been ten days, reckoning from the lodging of the submission to the award. No doubt the new Commercial Court could do as much in the way of economising time, but we think that the majority of litigants will think with us that in the matter of cost the Chamber of Arbitration has the pull, for the amount of the fees in each case has, on the average, not exceeded five guineas. At the same time there can be no question as to the efficiency of the Chamber as a means of arbitration, although its working expenses are as low as the average fees above mentioned. In 1892 the Court of Common Council granted £600. to meet expenses, and up to the present time the total expenditure has been just under £500. It is not often in law matters that anything connected with expenses turns out lower than the expectation.

**THE SECRETARYSHIP OF THE IMPERIAL CONTINENTAL GAS ASSOCIATION.**—Mr. G. F. Thompson has been compelled, on account of the state of his health, to resign his appointment as secretary of the Imperial Continental Gas Association, and to retire from the service. He is succeeded by Mr. R. W. Wilson, the assistant-secretary. Mr. Thompson, it may be remembered, undertook the secretarial duties at the commencement of last year, upon the resignation of Mr. R. S. Gardiner.

**REPORTED COMBINATION OF COAL PRODUCERS.**—According to a report in circulation early last week, a combination has been formed among East of Scotland and Lothian producers of cannel gas-producing coal, to raise the price. The charge for best cannel coal has declined to below 20s. per ton; whereas three years ago the quotation was 35s. It appears that producers have large stocks on hand, and the present time is regarded as favourable for forming a combination. It is understood that the Muirkirk gas-coal fields will be included in the combination.

## LOW TEMPERATURE RESEARCHES.

BY H. GRIME.

(Continued from page 4.)

### COLOUR OF PIGMENTS AT LOW TEMPERATURES.

AS we have said, most gases when liquefied are colourless. It is interesting to note the effect of reduction of temperature on bodies which are usually spoken of as coloured. Houston and Elihu Thomson (1871 Jour. Frank. Inst., quoted in Chem. News) have stated that as the temperature rises the colour of bodies tends to pass from one of a greater to one of a less number of vibrations. As Nicholls and Snow put it (Phil. Mag. 32, 1891, p. 407), the effect of heating a pigment is to diminish its reflecting power, the diminution being as a rule more marked in regions of great refrangibility. Hence comes the shifting of the colour towards the red. Ackroyd (see Chem. News, vol. 34, p. 76) concluded from theoretical considerations that as absolute zero is approached the prevailing tints of pigments will be blues and violets, finally merging into white. Experimental evidence seems in the main to support these theoretical conclusions. Prof. Wiedemann has stated, and his statement is confirmed by Dewar, that in contact with solid carbon dioxide, that is, at a temperature of about  $-80^{\circ}$ , sulphur is not yellow, but white. Prof. Kreutz in 1891 showed that vermilion, mercuric iodide and iodine become brighter at low temperatures. I suppose the increased brightness must be considered as due to a larger proportion of white light, and therefore of blue and violet rays in the reflected light. Professor Dewar has shown that at the temperature of boiling oxygen, vermilion is pale-orange and sulphur, potassium chromate, ferric chloride, and iodine tincture have lost their colour. The colours reappear as the temperature is allowed to rise. Blues and organic colours generally are said to be indifferent to change of temperature.

Returning to the action of liquid oxygen upon light it may be noted that no anomalous dispersion of light has been observed. Its index of refraction has been determined both by means of the prism and by the method of total reflection. The difficulty of obtaining prisms to withstand the great cold made the latter method preferable. The values obtained by Liveing and Dewar were 1.2236 by the prism method, and the higher value of 1.226 by the method of total reflection. Using the latter method Olszewski found the value 1.2235, but subsequently in conjunction with Witkowski he obtained the lower value 1.2226. By the total reflection method Liveing and Dewar also determined the refractive indices of nitrogen and air. Nitrogen (containing five per cent. of oxygen) gave the result 1.2053, and air 1.2062. These values are for sodium light. It may be noticed in passing that while gaseous nitrogen possesses a higher refractive index than gaseous oxygen, in the liquid state the order is reversed. In both states the refractive index of air is intermediate between those of its constituents. The refractive index of bodies varies with their densities. Several formulae have been put forward as giving a relation between the refractive index and the density, constant for all temperatures and pressures. This constant is known as the constant of refraction. The simplest and, on the whole, the most satisfactory formula yet proposed is that of Gladstone and Dale, who in 1858 showed experimentally that the function  $\frac{\mu-1}{d}$  (where  $\mu$  = refractive index and  $d$  = density) is much

more constant with change of temperature than Newton's expression,

$\frac{\mu^2-1}{d}$ . Gladstone and Dale's formula is not absolutely true. With

some bodies the deviation from the observed values is considerable, and in certain of these cases a closer approximation is obtained by employing the more complex formula proposed by Lorentz, viz.,

$\frac{\mu^2-1}{(\mu^2+2)d}$

Employing the simpler formula, the refractive constant of liquid oxygen, using Liveing and Dewar's value, is .19891; the value previously found for gaseous oxygen was about 5 per cent. lower, viz., .18950. For liquid nitrogen (containing about 5 per cent. of oxygen) the corresponding refraction coefficient is .225. Mascart's value for gaseous nitrogen was about 5% higher, viz., .237. In the search for a connection between the physical properties and the refractive index of bodies it has been found that it is possible, especially in the case of organic compounds, to assign what is called the atomic refractive power to some of the more common elements. This number varies with the relation of the atom to the other atoms in the molecule. Thus, using the Lorentz formula, the refraction equivalent or atomic refractive power of nitrogen is

2.21 for free nitrogen;  
at least 2.27 „ nitrogen combined as in nitrous oxide;  
and 2.50 „ „ „ „ ammonia.

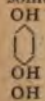
Multiplying by 14 the refractive constant calculated by the same formula for liquid nitrogen, we obtain the number 2.063, which is nearest to the number calculated by Brühl for free nitrogen,



though the agreement is not very close still, allowing for the impurity known to be present in the sample of liquid nitrogen used, it is sufficiently near to lead us to the conclusion that the molecules of liquid nitrogen are not very different in structure from those of the gas.

Another optical effect studied by both Pictet and Dewar is the influence of low temperatures on phosphorescence and fluorescence. Albeit but qualitative and confessedly incomplete, Dewar's results have, like the values of the refractive indices of liquid gases, much interest for the physical chemist. You are all aware that solar spectrum when allowed to fall upon a sheet of paper previously dipped into a solution of sulphate of quinine is considerably extended at the violet end. Bodies which, like quinine sulphate, thus absorb rays of light, and then emit them as rays of different—usually greater—wave length are said to be fluorescent. Fluorescence continues only so long as light falls upon the body, but there are a large number of bodies which, under certain conditions, possess the power of emitting light after the removal of the light stimulus. For instance, calcium sulphide after being exposed to light remains luminous in the dark for several hours. Such bodies are said to be phosphorescent. There seems to be a close connection between fluorescence and phosphorescence; all alkaloids forming fluorescent solutions become phosphorescent at very low temperatures. The degree as well as the duration of phosphorescent luminosity, and the conditions under which it is seen vary greatly with different substances. The phosphorescence of some substances can be seen only after they have been cooled to the lowest known temperatures; other substances require to be raised above the ordinary temperature before they phosphoresce. Pictet has shown that phosphorescent light is entirely extinguished at  $-60^{\circ}$  or  $-70^{\circ}$ , and he concludes that the production of this light requires a certain movement of the constituent particles of bodies. On refrigeration, this movement is annulled, and the phosphorescence disappears. The luminiferous power returns as the temperature rises. (C.R., 1894, Oct.) Dewar has gone further, and has shown that "while the temperature of  $-80^{\circ}$  is sufficient to stop all sensible emission from a previously excited body, it does not prevent an excited body from absorbing light energy that can be evolved at higher temperatures." In his experiments, Dewar cooled the body by dipping it into liquid oxygen, and then exposed it to a beam of electric light. On withdrawal from the lighted chamber into the darkened room, the body was seen to glow with a beautiful bluish or greenish light. An egg treated in this way appeared as a globe of bluish light. Indeed, most substances of animal or vegetable origin are phosphorescent under these conditions. So are the metals, as a rule. But the phosphorescence of metals appears to be due to the existence of an organic film upon their surfaces; for after ignition the metals cease to show phosphorescence. The great activity of organic matter in this respect is seen in the case of water. Impure water is remarkably phosphorescent; pure water is only feebly so. Again, milk is exceedingly luminous. There seems to be some connection between the action of bodies on light at ordinary temperatures and this phosphorescence at low temperatures. Coloured salts and coloured glasses and papers, as a rule, exhibit no phosphorescence. Professor Dewar has also traced some connection between chemical constitution and phosphorescing power, and he has thrown out the suggestion that it may be possible to decide vexed questions of chemical composition or structure by quantitative observations of phosphorescent light at low temperatures.

Amongst organic compounds, the haloid, sulphi- and nitro- derivatives as a rule show nothing of the property, or are, at the most, but feebly luminous. Bodies such as acetophenone (methyl phenyl ketone) and ethyl phenyl ketone containing the ketonic group seem to possess the phosphorescing power in the highest degree. In the case of isomeric substances the position of the various radicles appears to have some influence. The symmetrical dihydroxy-benzene-hydroquinone



is more luminous than the less symmetrical resorcinol



and pyrocatechol  $\begin{array}{c} \text{OH} \\ | \\ \text{C}_6\text{H}_3 \\ | \\ \text{OH} \end{array}$ . Similarly of the triatomic phenols,

the symmetrical phloroglucinol is more highly phosphorescent than pyrogallol. Among inorganic substances as yet tested the platino-cyanides excel all others in the intensity of their phosphorescent light.

On consideration of what has been learnt concerning optical properties it would appear that the effect of matter on the very small waves of the luminiferous ether increases with great reduction of temperature.

We have dwelt so long upon the optical properties that little time remains for the consideration of thermal, and of magnetic and electrical properties.

It has already been stated that liquid oxygen, like the gas, is diathermanous. By means of a globe-shaped vessel containing liquid oxygen the heat rays from an electric lamp can be brought to a focus. A piece of blackened paper placed at that point is set on fire. Thus we learn the remarkable fact that some kinds of matter at temperatures

200 degrees below the freezing point of water present little or no obstruction to the passage of radiant heat. As for the conductive powers of bodies, these seem to increase as the temperature falls. Bodies such as cotton-wool, which, in virtue of their power of "damping" comparatively short heat waves, are known as bad-conductors, have very little influence on the longer heat waves corresponding to temperatures below  $-80^{\circ}$ . Pictet has proved that up to  $-80^{\circ}$  the rate of warming of copper cylinders cooled to  $-170^{\circ}$  is the same, whether the cylinders are naked or covered with a layer of cotton wool 20 inches thick. Above  $-80^{\circ}$  the rate of rise of temperature varies with the thickness of the packing.

By means of his vacuum vessels, Dewar has made a few experiments with a view to determine the law of radiation at low temperatures. So far as they go, the results seem to show that radiation increases approximately as the cube of the absolute temperature. Thus, using liquid oxygen, the amount of gas obtained in a given time was:—

|                                                                  |  |
|------------------------------------------------------------------|--|
| 60 c.c. at $-115^{\circ}$ or $158^{\circ}$ absolute temperature. |  |
| 120 " $-78^{\circ}$ or $195^{\circ}$ "                           |  |
| 300 " $-6^{\circ}$ or $279^{\circ}$ "                            |  |
| 600 " $65^{\circ}$ or $339^{\circ}$ "                            |  |

Another fact brought out by the use of Dewar's vacuum vessels is that the laws of saturated vapours appear to hold at low temperatures.

Turning now to magnetic and electrical properties, we find that, like the gas, liquid oxygen is magnetic. Taking the magnetic moment of iron as 1,000,000, that of gaseous oxygen is 377, and of liquid oxygen 1,000. Liquid air is, as might be expected, feebly magnetic. There is but little evidence upon which to found any general conclusion, but certain substances—for example, ferrous sulphate crystals—seem to become more strongly magnetic as the temperature falls. Experiments by Dewar and Fleming on electric conductivity at low temperatures have confirmed and extended the results of work by Cailletet and Bouty, and by Wroblewski (C.R., 1885, vol. 101, p. 161). They find that the conductivity of metals and alloys increases in a marked degree with reduction of temperature; on the other hand the conductivity of the non-metals decreases. They believe that pure non-metals may possibly reach a maximum specific electrical resistance, and pure metals a minimum specific resistance at or near the absolute zero of temperature. In the case of the pure metals there is a possibility that the resistance may actually vanish at absolute zero. In their early experiments they used wires 50 or 100 centimetres long and three thousandths of an inch (mils.) in diameter. These they coiled round a thin plate of mica, and attached the ends to stout insulated copper rods. This arrangement allowed the resistance coils to be readily immersed in a bath of liquid oxygen. But the wires, rendered brittle by the low temperature, were found to break at the bends, and in the latest experiments the wires were wrapped round cylinders prepared as follows: Two pairs of high conductivity copper rods of 4 m.m. diameter, insulated from each other by india-rubber, were bent round, and a thin sheet of vulcanised fibre was sewn round the ends so as to form a cylinder two to three centimetres in diameter, and four to five centimetres in length. The successive turns of the coil were insulated from each other by means of a silk thread. The observations were taken at seven different temperatures, viz., (1) about  $100^{\circ}$ ; (2)  $20^{\circ}$ ; (3)  $0^{\circ}$ ; (4)  $-80^{\circ}$ , using a bath of ether and carbon dioxide; (5)  $-100^{\circ}$ , in liquid ethylene boiling under atmospheric pressure; (6)  $-181^{\circ}$ , in liquid oxygen boiling under atmospheric pressure; and (7), about  $-197^{\circ}$ , using as a bath oxygen boiling under a pressure of about 25 or 30 m.m. of mercury. It was found that, on plotting out the specific resistances with absolute temperatures as abscissae, the lines of resistance of metals are more or less curved lines, which tend downwards in such a way as to show that if prolonged beyond  $-200^{\circ}$  they would probably pass through or near the origin; that is to say, at the absolute zero of temperature the electrical resistance of pure metals would be probably nil. At the lowest temperature at which observations have been made, copper is the best conductor of all the metals, excelling even silver. As an instance of the great decrease in the electrical resistance at these low temperatures, it may be mentioned that iron at  $-200^{\circ}$  is a better conductor than copper is at the ordinary temperatures. It is worthy of note that the rate of decrease is greatest in the case of the two magnetic metals—iron and nickel. Impurities have a marked effect on the electrical resistance, so much so that Dewar and Fleming believe that the curve of electric resistance over a long range of temperature might be used as a criterion of the purity of a given sample of metal. The resistance curves of alloys are nearly straight lines, with but little slope. When the constituent metals of the alloy are chemically very different, as, for example, in German silver, the slope of the curve is no more than one-tenth that of the curve of a pure metal. In the case of alloys of chemically similar metals as platinum-rhodium the slope is much steeper, but never such as would indicate that, if prolonged, the curve would pass through the origin. The non-metal, carbon, which at the temperature of the electric arc appears to possess practically no resistance, becomes a worse and worse conductor as the temperature falls.

(To be concluded.)



## MERSEY AND IRWELL JOINT COMMITTEE.

THE usual monthly meeting of this Committee was held on Monday, Mr. Alderman Thompson presiding. In the report of the Consulting Sub-committee reference was made to the position of the Bury Corporation. Two months ago the Corporation asked for a further period of two years in which to complete their sewage works. The reason assigned was that it would be impossible to get men and materials to do the work in less time. Subsequently the Corporation intimated that they were perfectly willing to take an extension of the order for twelve months, in order that at the end of that time the Committee might review the progress made, and then either further extend the order or take legal proceedings. They added, "But the Corporation feel that it is unreasonable to grant extension for the period of two months, and accordingly, unless your Committee grant the further extension asked for, there will be no alternative but for the Corporation to apply to the magistrates to extend the order for a reasonable period." The sub-committee now advised that the Corporation "be recommended to apply to the Court for an extension of time, in accordance with the terms set out in the latter part of their letter, and that failing such application being made before the next meeting of the Joint Committee the sub-committee recommend that the matter be then brought to an issue by the Joint Committee making application to the Court for penalties against the Corporation." This course was agreed to on the motion of Mr. T. W. Killick, seconded by Mr. J. P. Haslam. The only other matter of interest before the meeting was the case of Mr. W. Clegg, fellmonger, Milnrow. Mr. Clegg appeared before the Committee, and stated that he had spent between £4,000. and £5,000. on plant for the purification of the effluent from his works, and hoped in a few days to have everything in working order. He proposed to try the scheme recently suggested by Sir Henry Roscoe, which he thought would cost less than the one he had hitherto been working. The Committee gave Mr. Clegg an extension of three months to complete his preparations.

## THE SCOTTISH MINERAL OIL INDUSTRY DURING 1895.

AS an addendum to our summary for the year 1894, published in issue January 26th, 1895, reference was made to the then proposed renewal of the scale and wax agreement with the American importers. The proposal came from the American side, and much foolish writing there was then about the great benefit that was thereby to accrue to the industry as a whole. In that addendum we took the liberty of delivering a word of warning against the roseate inferences that were then being drawn by the daily Press, laying it down as an axiom that for the salvation of the great Scottish industry something very different was required. So long as burning oil remained so badly depressed the business of shale distilling would assuredly continue a precarious, not to say a positively ruinous, one. The new scale and wax agreement was subsequently forged, and quickly found, as we had predicted, to be a very unmanageable benefit indeed. It was shaky from the first, and before the close of 1895 it became little better than a dead letter. The solid paraffins were raised all over by about 1½d. a penny per lb. (no great increase), and the British candle-makers were included in the compact as the main customers for the raw material. The Americans were to give some concessions as regards the continental markets, and they agreed to take up from the Scotch makers a certain quantity of their scale at a price, if not otherwise disposed of. From the first there were suspicions all round of want of fidelity, and underselling was practised in certain quarters. The candle-makers were unable to hold their new association intact, and several members withdrew; the Americans proved to be putting an unexpected reading on the clause regulating the selling of scale and wax on the Continent, and finally, when called upon to take up the surplus of Scotch scale, they refused to do so, alleging that, as the candle-makers' new combination had broken down because of the underselling that had been practised, the American parties to the agreement could not be expected to implement their share of the undertaking. This, in brief, is the history of the new scale and wax agreement during 1895, and as 1896 opens a series of meetings in London are being called, to see whether there is any possibility of the leaky contrivance being tinkered up again. It certainly does not look more promising than it did when we wrote a year ago, but rather less so. Prices of these solid paraffins remain nominally at the agreement range of 1½d. to 2¼d., according to kind and quality, but doubtless, under the circumstances, each individual maker will be holding himself at liberty to sell under that range if he sees fit. But, despite the fatuity of the new scale and wax combine, the year 1895 shone renewed life upon the Scottish mineral oil industry, and that so in the one way we said a year ago it would come, if it was coming at all. Burning oil has advanced in price from the losing figure of 4¼d. per gallon at the beginning of the year, to the highly satisfactory one of

6¼d. The cause of the rise was the partial failure of the American reserves, and a consequent general advance of burning oil values all over the world, including the Russian article as well. At the beginning of the year there was no expectation of anything of the sort, on this side at any rate. The American rise was phenomenal. It began quietly in February, gradually acquired momentum, until in April it went up like a rocket, without even the stick coming down again. It receded from the top elevation, certainly, but held comparatively high for the rest of the year, though slightly easier again just at the close. The effect of it all on the Scottish producers was electrical. They met hurriedly in Glasgow early in April, and raised their oil to 5¼d. for all new prompt sales, at the same time deciding to shut down all their forward selling entirely, no matter what price might be offered. This was done in the nick of the upward rush, and within two or three days there was another highly-excited meeting in Glasgow, at which the Scotch article was put up to 7¼d. per gallon. This proved to be one penny over the just mark, as was shown when the American market righted itself, and declined a little from the top quotations of the boom; and, accordingly, in May, the Scotchmen met again, and adjusted their market to 6¼d. per gallon at works. This figure was maintained pretty steadily, and at it the whole of the contracting for the new season 1895-96 was done. Deliveries at this well-paying price have been going on largely from October, and since that time the industry has been deriving the full benefit of the rise; whereas, before that, the Scotch makers were deriving only a partial benefit from an odd new sale now and again. Only after the balancing in the spring of 1896 will it be possible to gauge accurately the amount of the good accruing; but it may be said that the advance of 2d. per gallon (if fully maintained) on so very extensive an output as that of burning oil will mean to these Scotch companies quite a potential increase of yearly revenue—much more than sufficient to restore to vigour those of them that had not been weakened down past all hope of survival. Everything depends on the American production—if it should become over-abundant as before, then the general price will lower again as a consequence.

With the exception of sulphate of ammonia, the other products of the industry have done fairly well. Paraffin spirit began the year at 6d. per gallon; dropped to 4½d., took to the rise again till 9d. was touched, and is now steady at 8d. Lubricating oils at the beginning were at a range of £4. 5s. to £6. for 865°/895°, and have gradually mended to £4. 15s. to £6. 10s. The improved movement in these two articles is due to the general revival of trade. Sulphate of ammonia has done very badly, partly owing to the over-production of it and of rival fertilizers, and partly, apparently, because of its being, for the time, less in favour with agriculturists. At the close of 1894 it was fetching over £11.—a considerable decline from the top value of that year—but still fairly remunerative. It has dropped all 1895, and before the close had been done at £8. 8s. 9d., though now fractionally better. At present it is by far the most disappointing of the products, though, owing to the serious hitches above referred to, the solid paraffins also give no little cause for anxiety.

At the spring balancing only two of the companies paid anything—the Broxburn and the Pumpherston—but on the whole, bookkeeping charges were better met. Sulphate of ammonia had been fairly remunerative over the period operated on. The new Clippens Company struck balance at the end of September, coming out with a loss of £2,883. for the year, making a total of £13,555. over the three years of their struggle. The Dalmeny balanced at the end of October, finding once more a 20 per cent. dividend for the shareholders. This company is lightly burdened with capital; its crude oil was all well contracted for, and its sulphate bore fair prices for the first half of the year. Production being confined to these two, the Dalmeny is not liable to the vicissitudes of the larger refining concerns. Following the burning oil boom, the shale miners moved for a rise of wages, and the men of the Caledonian Company came out; but the masters were firm, and the men had to content themselves in the meantime. On the Stock Exchanges oil shares went up wildly early in the year, but adjusted themselves afterwards. At present they suffer from the rupture of the American agreement. The officers of the Society of Chemical Industry have been keeping an eye to the flash-point movement, and some public notice has been paid to it; but the companies have been holding aloof in terms of agreement with the Americans. On the whole, 1896 opens with better hopes than have prevailed for a long time; but there is no certainty, and much of the future depends on influences which are altogether outside the guidance of the native industry itself.

**NITRATE STATISTICS.**—The Permanent Nitrate Committee's public statistical circular for January shows that the total exports to Europe during December were 2,362,000 quintals; loading for Europe, 1st January, 1,000,000 quintals; imports (Europe), December, 57,610 tons; deliveries in Europe, December, 45,720 tons; visible supply (Europe), 1st January, stocks and afloat, 664,180 tons.



## SOCIETY OF CHEMICAL INDUSTRY.

## MANCHESTER SECTION.

THERE was a large muster of the members of the Manchester section of the Society of Chemical Industry at the third meeting of the session, held last week, at the rooms of the Chemical Club, Victoria Hotel. The title of the first of the two papers, that by Dr. B. W. Gerland, had been misprinted on the agenda card. Instead of "Some new Methods of Testing Gas," the title should have been "Some new Methods of Testing Indigo"—a blunder which the Chairman (Mr. G. E. Davis) laughingly attributed to the festivities of the season.—Dr. Gerland, in his paper, stated that there innumerable methods of testing indigo, but none were absolutely reliable—a circumstance which was all the more surprising in view of the value of indigo as an article of commerce. He referred to some of the new methods, and it appeared that he himself favoured the nitro-benzol process, which differs very much from the ordinary methods. In the course of the discussion which followed much diversity of opinion was manifested.—Mr. Rawson, of Bradford, who is recognised as one of the leading authorities in the country on indigo testing, laid great stress upon the fact that "indigotin" could be most accurately estimated by means of permanganate of potash, and that the method applied to commercial indigo after removal of other substances capable of acting upon potassium permanganate formed at present, in his opinion, the best method of analysis. He had heard, he said, of experiments with the nitro-benzol process, in which it was found that the high temperature destroyed some of the indigotin.—The Chairman also favoured the use of permanganate of potash, the action of which, he said, was constant and reliable.—Dr. Gerland admitted that it was so when the indigo was pure.—Mr. Wilfrid Irwin followed with a paper relating to gas manufacture. At the closing meeting of last session he read an interesting paper on the enrichment of gas, a subject which is at present receiving much attention from gas companies and corporations owning gasworks, as it is found that by the use of oil, benzol, and other enrichers it is possible to dispense to some extent with the use of high-priced cannel coal. He was invited to continue his researches, and at this meeting he discussed "The effect of heat on the illuminating power of coal gas, and its relation to the theory of flame." He described some of the phenomena of flame, referring in particular to the stratification observable in an ordinary gas flame, a point as to which, he remarked, we did not yet know all that was to be known. In certain experiments he had made he had found that on subjecting coal gas to a high temperature there was a great reduction in the illuminating power. Luminosity he found to be due to two different sets of reactions, and he pointed out that while one burner was more favourable to one set another might be more favourable to another set. The results he had obtained seemed to show that the argand burner, which was used for testing in most gasworks, was scarcely a fair method of estimating the commercial value of gas, and he suggested that a fairer method would be to take the average of the union jet and the slit burners, which were those in everyday use.—The discussion of Mr. Irwin's paper was postponed.

## NITRATE, INDIGO, AND TALLOW IN 1895.

**Sodium Nitrate.**—In the early part of the year the nitrate market was acutely influenced by severe wintry weather, which prevailed into March, and rendered the agricultural season one of the latest on record. Owing to the closing of many rivers and harbours, the delivery of nitrate in January and February was rendered almost impossible, whilst farmers were, of course, wholly unable to make use of the article. The value of arrived cargoes in the beginning of January was 8s. 10½d. per cwt., but, because of a shrinkage of the demand, caused by the protracted winter and indisposition on the part of the trade to buy at so full a price, values gradually fell away, until 7s. 9d. per cwt. was reached in April. The lower range of prices stimulated the demand very materially, and the deficiency of deliveries in January and February was more than made good in the two following months. Under the influence of rumours favourable to the completion of a combination scheme to restrict production, a large business was also done in summer shipment at about 8s. 3d. per cwt., and in autumn shipment at 8s. 4½d. to 8s. 7½d. per cwt. In the month of October shipments increased. The result was an irresistible declension in values until several arrived cargoes changed hands at 7s. 6d. per cwt., two exceptionally low transactions taking place at 7s. 5d. and 7s. 4½d. per cwt. This was the low water mark for cargoes, although in Continental centres speculative dealings took place even below this parity. During December there was a distinct improvement, probably resulting from the fact that shipments for this month proved to be more moderate than was at one time expected. Arrived and due cargoes were at the close held for 7s. 7½d., and October-December sailings for 7s. 8d. to 7s. 11d. per cwt., as in

size and position. The consumption for the year amounts to 907,000 tons, of which the Continent took 789,500 tons, and the United Kingdom 117,500 tons. This represents an increase of 5¼ per cent. on the Continent and of 2½ per cent. in the United Kingdom as compared with 1894.

**Indigo.**—At the close of the year prices were somewhat lower than those ruling at the opening, whilst, except during very short intervals, there was but little animation observable either at the public auctions or in the private market. The causes are, however, very apparent. In the first place, owing to the lateness of the arrivals of new crop, the January sale took place at a time when the market was still very bare, and prices consequently showed an advance which was hardly justified looking at the general position of the article and the very low rates that had been ruling in Calcutta, whilst in the second place, as the year advanced, the market was very much influenced by the prospects of another large Bengal crop. The fluctuations in value have, however, not been very important. The advance in January was quite lost at the April sale, and the slight recovery in July again disappeared in October, the final result being that prices at the last October auctions established an average fall of about 2d. to 3d. per lb. compared with those ruling 12 months previously, but taking the values on the 31st of December there is very little change.

**Tallow.**—To those who relied on the scarcity in America and the promised short supplies from Australia for an advance in prices the result has been disappointing. Advances repeatedly came to hand from Australia that, owing to the persistence of drought, a considerable decrease in the shipments would ensue, but month after month large shipments took place, with the result that the arrivals here far exceeded those of any previous year. The stock in London has more than doubled during the year, and is now larger than it has been for 30 years. Home tallow has not been very plentiful at any time, and soap-makers here have freely availed themselves of the plentiful supplies from the colonies. Exporters have found, especially during the latter part of the year, considerable difficulty in selling in Holland and Germany, owing to the competition arising from the abundant supply of inland tallow there. The fluctuations of prices at the auctions were unusually small. The extreme limits of fine mutton tallow were 25s. 6d. and 23s. 6d. Prices of beef tallow had a wider range. Beginning at 22s. 6d., on July 19th 20s. 6d. was touched; from that date there was a steady advance until October 11th, when 24s. 3d. was paid, the highest of the year, and an uninterrupted decline has since taken place to 21s. 6d., the closing figure.

## DRYSALTERY SALES IN 1896.

DURING this year the following sales of interest to the trade will be held. Most of them are held at the London Commercial Salerooms, excepting those for drugs, which take place at the New Corn Exchange Hotel, Mark Lane; the tallow and oil sales are held at the Baltic, and those of indiarubber, and a few other articles, at one or other of the Brokers' Showrooms.

**SHELLAC AND DRYSALTERIES.**—Every Tuesday, at 1 p.m. The first sale was held last Tuesday, 7th inst.

**GUMS.**—*Arabic*, &c., on Thursdays, at 12-30 p.m., once every four weeks. *Varnish*, &c., gums, every four weeks, on Thursdays, at 12 noon.

**INDIARUBBER.**—Every Friday, at 12 noon. The first sale took place yesterday, 10th inst.

**EAST INDIA INDIGO.**—Commence on January 27th, April 13th, July 13th, October 12th.

**GUATEMALA INDIGO.**—These sales are held in March, July, October, and December, the dates being regulated by the conclusion of the East India indigo sales.

**ISINGLASS.**—Sales will be held at 12 noon on February 18th, March 17th, April 21st, May 19th, June 16th, July 14th, August 25th, September 22nd, and October 20th. The first sale of the year was held last Tuesday.

**HORNS, BONES, &c.**—Sales are held on two consecutive days, at 11 a.m., deer horns and bones being sold on the first day, and buffalo, ox, and cow horns on the second. The dates are:—February 19th and 20th, May 14th and 15th, August 6th and 7th, November 12th and 13th.

**TALLOW AND OILS.**—Every Friday, at 12 noon, in the Baltic Salerooms, South Sea House.

**BLACK SMOKE FINES.**—At the recent meeting of the Manchester justices, Mr. James Johnson moved the following resolution: "That the Clerk be instructed to compile a return, for distribution to the justices, showing—(a) The number of informations heard during 1895 for offenders emitting black smoke, and the way in which the cases were dealt with; (b) the duties and powers of justices with regard to these prosecutions." Mr. Johnson declared that for people who were old offenders the fines were inadequate.



## The Patent List.

*This list is compiled from Official sources in the Manchester Technical Laboratory, under the immediate supervision of George E. Davis and Alfred R. Davis, who report professionally upon the value of Chemical Patents.*

### APPLICATIONS FOR ENGLISH LETTERS PATENT.

- Removing Mineral Oil Stains from Vegetable Fabrics. J. Y. Johnson. 24,653. December 23.  
 Apparatus for Manufacturing Acetylene Gas. T. Holliday and J. H. Esley. 24,666. December 24.  
 Improvement in Galvanising. R. Heathfield and W. S. Rawson. 24,703. December 24.  
 Separating Lubricating Oil from Condensed Water. H. H. Lake. 24,708. December 24.  
 Purification of Oils and Fatty Substances. A. E. Morgans. 24,714. December 24.  
 Improved Treatment of Spent Oxide. J. H. Paul. 24,733. December 27.  
 Degreasing Wool and Recovering Oils, etc., from Fibrous Materials. G. E. Wright and W. Monk. 24,787. December 27.  
 Improved Method and Apparatus for Washing Alkali-amalgam obtained by Electrolysis. P. Jensen. 24,837. December 27.  
 Improved Preparation of Compounds of Fluoride of Antimony. H. H. Lake. 24,848. December 27.  
 Treating Nitrogenous Organic Matters for Production of Ammonia and Residual Products. A. McDougall. 24,920. December 30.  
 Sewage Filtering Apparatus. T. B. Jones. 24,943. December 30.  
 Apparatus for Destroying Obnoxious Fumes, and Recovering Bye-products from Distillation. S. G. Merrick and H. L. Washburn. 25,001. Dec. 31.  
 Improvements in Electrolytical Apparatus. R. Heathfield and W. S. Rawson. 25,052. December 31.  
 Improved Process of Making Oxide of Lead. H. H. Lake. 25,069. December 31.  
 Improved Sewage Filters. M. Hilton. 25,021. December 31.  
 Purifying Red Oxide of Iron. G. H. Smith. 25,023. December 31.

### ABSTRACTS OF LATEST COMPLETE SPECIFICATIONS.

*These abstracts are specially prepared for the Chemical Trade Journal and ALL RIGHTS of publication are RESERVED. This is the earliest series of abstracts of Chemical and allied patents accessible to the public.*

**An Improved Method or Process and Apparatus for Obtaining Chlorine and Zinc in the Treatment of Ores Containing Zinc or Blende and other Metals and Metalloids.** H. R. Lewis, 7, Drapers' Gardens London, and C. Gelstharpe, 211, Jubilee-terrace, Clayton, Manchester. Eng. Pat. 524. Jan. 9, 1895.

The ores are first crushed and then calcined so as to render the zinc contents soluble in water or a mixture of water and acid, with or without a chloride. The calcination is effected in the furnace detailed in specification 6,567/92, wherein the method of recovering the sulphurous gases given off is described. After being properly calcined, the ores are lixiviated with water or acid water, and the solution thus obtained passed when necessary over fresh oxidized ores. A suitable chloride, such as salt, etc., is now added in proportion to the amount of zinc in solution, the whole concentrated to a desirable strength, and then allowed to stand so that the sulphates may separate. The solution thus obtained is subjected to electrolysis.

When any soluble chloride, such as calcium chloride, that forms insoluble sulphates is added, the latter are allowed to separate prior to the evaporation. The precipitated metals forming the residue are recovered in accordance with specification 8,467/92. The electrolysis is conducted in a specially-constructed apparatus, two forms of which are illustrated. The distinguishing features in each instance are: (1) The introduction of deflecting plates between the electrodes, which direct the evolved chlorine gas upwards; (2) an arrangement of scrapers which periodically remove the crust of deposited zinc; and (3) the provision of means whereby the contents of the cell can be heated. In one case this is accomplished by steam pipes, and in the other by a hot steam, air, or water jacket. The process is, of course, applicable to the direct treatment of zinc solutions. This patent avoids the use of lime, and diaphragms in the electrolytic vats, so that currents of lower voltage can be employed.

**Improvements in and Relating to Tanks for the Precipitation of Sewage and Foul Waters.** G. H. Skelsey, 15, Cook-street, Liverpool. Eng. Pat. 2,449. Feb. 4, 1895.

The object is to effect the deposition of the precipitated impurities more simply, and to perform the removal of the collected sludge automatically. The tank is formed with baffle walls alternately sprung from the bottom, and carried by a girder from the top. In this way the sewage flows first down and then up until it reaches the end of the tank. To avoid the formation of currents the sewage runs into the main tank by overflowing the sill of a trough that extends the full width of the tank. The bottom of each division of the tank is contracted like an inverted bottle neck, in the narrow portion of which the sludge collects and remains in a state of comparative quiescence, finally settling under

arched tiles which enclose the lowest portion of the bottle-necked channel. From time to time, by opening a cock on a sludge outlet pipe connected with this channel, the sludge is forced out by the weight of the superincumbent water in the tank.

**Improvements in and Relating to Apparatus Employed in the Recovery of Precious Metals from their Solutions.** H. L. Sulman 60, Gracechurch street, London. Eng. Pat. 2,729. Feb. 7, 1895.

The apparatus is designed to supply regulated quantities of a precipitating agent to a measured quantity of the solution to be treated. Thus, while a ball tank fitted with a syphon is filling with gold solution, a specially constructed valve passes a definite quantity of zinc fume suspended in water in a second tank into the outlet pipe connected to both tanks. As the gold solution tank fills the ball cock rises, and, by means of a sector lever, actuated by a chain connected to the ball cock rod, causes the displacement of a definite quantity of zinc liquor from the zinc tank. When the former tank is full the syphon (which is bent into the form of a "pigtail twist") operates, discharging the contents as well as the zinc charge into a conical mixing vessel. Owing to the tangential entrance of the solution into this vessel a thorough mixing is attained, the contents finally passing by a second similarly constructed syphon to the precipitation tank. As it enters one end of the latter, which is partitioned off from the main portion of the tank, the mixture of gold solution and zinc fume is kept mixed by descending over inclined baffle plates to the bottom, where it passes under the partition and rises through zigzag plates placed in series, close together. On these the gold and zinc deposit, and slide down to the bottom of the tank, which is fitted with mud holes. The liquid portion overflowing into a surrounding exterior vessel, filters through a false cloth bottom, and passes away to a sump, to be used over again.

**Improvements in and Relating to Apparatus for Drying Superphosphates and other Granular Materials.** C. Zimmermann Harburg, O. Ruperti, A. Borgnis, C. von Merck, and E. Merck, trading as H. J. Merck and Co., 6, Davenhof, Brandstwick, Hamburg. Eng. Pat. 4,429. March 1, 1895.

A chimney-shaped chamber heated by flue gases is filled with shaking plates suspended by chains, so as to incline first to one side and then to the other. The material is fed in at the top by a conveyor. The plates are shaken by rods attached to the under side, and set in motion outside by belt pulleys and eccentrics. The angle of inclination can be regulated from the outside during the operation of drying by lengthening or shortening the chains which are attached to ratchet wheels and pawls. A characteristic feature is the lateral disposition of the coke furnace, which permits the convenient removal of the dried superphosphate as it falls from the last shaking plate, and also gives additional control over the heating gases in their passage to the drying chamber. There are three drawings.

**Improvements in Apparatus for the Recovery and Purification of Waste Oil.** V. Camiz Via, 2nd Aprile No. 5,019, Venice, and A. Bettoni, Ponte San Soverno, No. 4,932, Venice. Eng. Pat. 11,048. June 19, 1895.

This invention is essentially mechanical. Three drawings show the general arrangement of the apparatus employed. It is designed to deal with the waste oil mixed with condensed water from all classes of machinery on land and aboard ship. The separator, which is the main feature, is kept at 140° F. by a steam pipe, and is in connection with a series of special filters.

**Improvements in the Manufacture of Lead Pigments or Lead Compounds for Use as Pigmentary Materials.** W. B. Priest, 50, Fenchurch-street, London. Eng. Pat. 17,145. Sept. 8, 1894.

A mixture of sulphate of lead and water is heated to within 10° of the boiling point, and then a magma of calcium hydroxide added. The whole is boiled until the reaction is complete.

The calcium sulphate is separated from the hydrated oxide of lead by diluting with water and well agitating; on settling two layers are formed, with the hydrate at the bottom. Mixed with sulphate of lead, several pigments can be prepared in the manner described in the specification. To make white lead, containing some sulphate, the above process is followed, up to the completion of the reaction between the lead sulphate and calcium hydroxide, when CO<sub>2</sub> is blown in. If desirable, the latter may be passed over the lead hydroxide after drying.

**Improvements in or Relating to the Precipitation of Precious Metals from their Solutions.** H. L. Sulman, 60, Gracechurch-street, London. Eng. Pat. 2,730. Feb. 7, 1895.

In using zinc fume to precipitate gold from cyanide solutions the presence of oxide of zinc is not desirable. This patent provides for the purification of the fume by treating with either ammonium hydroxide, chloride or carbonate, by which reagents the oxide is removed, leaving the metallic zinc. The same method can be applied to the cleansing of the zinc shavings used in the precipitation boxes in the ordinary cyanide



process, thus obviating the necessity of using quite fresh shavings or turnings.

**Improvements in the Recovery of Ammonia from Sewage Effluents and other Weak Ammoniacal Liquors.** T Twynham, Elmhurst, Egham, Surrey and F. E. Matthews, The Pines, Englefield Green, Surrey. Eng. Pat. 2,625. Feb. 6, 1895.

The ammonia is obtained by passing the weak solution over hydrated oxide of iron in combination with phosphoric acid. In practice the material is supplied in a natural form by hydrated iron ores rich in phosphoric acid. The filter, packed with this material, is surrounded with a jacket which can be heated by steam, &c., and so drive off the absorbed ammonia. For sewage the bottoms of the usual filters are packed with the ammonia-absorbing ore, the upper portion removing the suspended matters, and leaving the iron ore to act on the effluent. When the absorbing power of the iron ore is exhausted it can be used direct as a fertilizer, being valuable for its ammonia and phosphoric acid, or the former can be removed with weak acid.

## REVIEW OF THE MANURE TRADE IN 1895.

A review of the past twelve months shows an almost continual decline in the value of manure material, both nitrogenous and phosphatic. The spring manure season was a disappointing one, leaving extensive stocks of manures, as well as material, in the hands of the manufacturers. In the main, the policy of manure makers has been to buy from hand-to-mouth, so that in order to effect sales, sellers of material have had to make heavy concessions in price, until the level reached is lower than any previous record.

**Mineral Phosphates.**—With uninterrupted working of the South Carolina deposits and increased Algerian output from Algeria, quotations have had to give way. The value of South Carolina and similar grade Algerian at the beginning of the year was 6½d, the closing value is about 5½d. The opening quotation for Peace River was 6¾d, but now 6d. is the outside value. In January 7¾d. was asked for 75/80% Florida Rock, but 7½d. had to be taken in order to effect sales. During the spring months the principal raisers combined to maintain prices, but in June the combination came to an end, when the price immediately became 6½d., and then 6¼d., which latter price was about the value of cargoes at the close of the year. The low price reached must be altogether unremunerative to raisers, and a recovery in value would seem to be inevitable.

**River Plate Bones.**—With ample supplies of cheap mineral phosphates and cheap nitrate of soda, and still cheaper sulphate of ammonia, the value of bone in all shapes has fallen continuously. The high prices throughout 1894 induced much larger shipment of bone, especially from India, and the available supply for 1895 spring manure season proved to be more than sufficient. The value in January was £4. 10s., but in March it had fallen to £4. 2s. 6d., and that remained the price until June, when £4. 5s. was paid. Since then the value has declined, until at the close of the year £3. 16s. 3d. was the outside value.

**Crushed India Bones and Bone Meal** have in the main been in line with River Plate bones. The opening value in January being about £4. 12s. 6d. and the closing value in December about £3. 17s. 6d. per ton, although £4. asked for crushed Kurrachee bones.

**Nitrate of Soda.**—Owing to the late opening of the season allowing the heavy shipments of the later months of 1894 to come on the market in time to meet the heavy spring demand, prices at no time rallied much beyond the January opening value. Sellers remained very firm until the second half of March, when it became evident that supplies would be more than sufficient. The price then drooped to 8s. 1½d. to 8s. 4½d. in April, and to 7s. 10½d. to 8s. in May. In August, 8s. 1½d. to 8s. 3d. was current value; in September, 7s. 9d. to 8s.; and in October, 7s. 7½d. to 7s. 9d., since when there has been no quotable change. Due cargoes at the close of the year were worth about 7s. 7½d. per cwt. From time to time efforts have been made to reconstitute the combination of producers, but so far all efforts have proved abortive. At the close of the year negotiations were still pending with decidedly better prospects of success than hitherto, but should the combination be effected it is not likely to affect prices very substantially over the coming spring season, owing to the very large visible supply. The visible supply (stock and afloat) at the end of the last three years has been as follows:—1893, 445,000 tons; 1894, 500,000 tons; 1895, about 660,000 tons. Deliveries:—January/April, 1894, were 500,000 tons; January/April, 1895, 505,000 tons. No doubt the low price reached will stimulate consumption, but after making ample allowance for that, there cannot fail to be a very considerable surplus to carry forward to next season.

In **Miscellaneous Nitrogenous Material** business has been comparatively small, but prices have in the main been governed by the value of ammonia in sulphate of ammonia and bone.

## JAVA INDIGO IN 1895.

IN their review of the Java indigo trade during the past year, Messrs. Bunge & Co., of Rotterdam, state:—The prices of Java indigo have not fluctuated much during the past year. Business was not very animated, but during the last month a better feeling prevailed on account of the rise at Calcutta, which placed Javas in a much better position, and several dealers and consumers were again in the market.

Round lots have been sold, and further inquiry is looked for. The three good qualities of Java indigo, viz., strong colour, tender paste, and high test, are always much appreciated, principally when prices are on a par with other sorts. The reports of the new crop are favourable, and at about the end of February the first arrivals are expected in Rotterdam. The comparative prices for 1894-5 were as under:—

|                    | January, 1895. |    |         | January, 1894. |    |         |
|--------------------|----------------|----|---------|----------------|----|---------|
|                    | s.             | d. | s. d.   | s.             | d. | s. d.   |
| Ordinary .....     | 4              | 9  | to 5 3  | 5              | 6  | to 6 3  |
| Middling .....     | 5              | 4  | to 5 10 | 6              | 5  | to 6 7  |
| Good Middling .... | 5              | 11 | to 6 3  | 6              | 8  | to 6 11 |
| Fine .....         | 6              | 3  | to 6 7  | 7              | 0  | to 7 2  |
| Superior .....     | no stock.      |    |         | 7              | 3  | to 7 5  |

per Engl. pound, c.i.f. United Kingdom or United States of America, less 1% discount.

The production of the last crop has been about 590 tons, against 495 in 1894, 632 in 1893, 638 in 1892, 711 in 1891, 503 in 1890, 722 in 1889, and 662 in 1888. The following are the statistics for the last eight years. Holland:—

|                      | 1895. | 1894. | 1893. | 1892. | 1891. | 1890. | 1889. | 1888. |
|----------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Imports....          | 5192  | 4934  | 6700  | 6717  | 8532  | 7363  | 9231  | 9379  |
| Deliveries..         | 5314  | 4631  | 6537  | 11033 | 5528  | 8518  | 7265  | 9737  |
| Stock, 31st December | 914   | 1036  | 728   | 565   | 3981  | 977   | 2132  | 166   |

Chests

## EXPORTS OF ALKALI AND BLEACH.

THE following figures, which are taken from the official foreign and colonial statistics of the United Kingdom, give the amount and value of alkali and bleaching materials shipped to the undermentioned countries during the month of November, 1895, as compared with the same month in 1894:—

| ALKALI.                  |         |         |         |         |
|--------------------------|---------|---------|---------|---------|
| Port.                    | 1894.   | 1895.   | 1894.   | 1895.   |
|                          | Cwts.   | Cwts.   | £       | £       |
| Russia .....             | 14,286  | 13,735  | 4,949   | 4,269   |
| Sweden and Norway ....   | 19,893  | 17,856  | 4,084   | 4,060   |
| Germany .....            | 7,683   | 11,141  | 2,029   | 2,998   |
| Holland .....            | 8,549   | 18,139  | 1,781   | 2,359   |
| France .....             | 3,251   | 3,501   | 1,145   | 1,259   |
| Spain and Canaries ..... | 29,687  | 20,826  | 10,497  | 7,194   |
| Italy .....              | 19,512  | 15,742  | 6,263   | 5,257   |
| United States .....      | 465,231 | 394,857 | 97,862  | 86,352  |
| Australasia .....        | 10,194  | 13,329  | 3,708   | 3,997   |
| British North America .. | 43,196  | 41,786  | 9,888   | 10,373  |
| Other countries .....    | 99,544  | 93,173  | 29,722  | 27,489  |
| Total .....              | 721,026 | 644,136 | 171,928 | 155,607 |

| BLEACHING POWDER, ETC. |         |         |        |        |
|------------------------|---------|---------|--------|--------|
| Port.                  | 1894.   | 1895.   | 1894.  | 1895.  |
|                        | Cwts.   | Cwts.   | £      | £      |
| United States .....    | 83,687  | 88,291  | 32,262 | 30,323 |
| Other countries .....  | 46,772  | 49,892  | 17,392 | 16,872 |
| Total .....            | 130,459 | 138,183 | 49,654 | 47,195 |

## Trade Notes.

MESSRS. BRYCE AND RUMPF. —We are advised that from January 1st this firm has ceased its connection with the Farbenfabriken *von* F. Bayer and Co. They will carry on business as heretofore in chemicals, dyewares, &c., at 58, Fountain-street, Manchester, as their headquarters.



**CHEMICAL EXPORT TRADE IN 1895.**—The feature of last year's trade which gives most satisfaction is the distribution of the increase in the value of the exports throughout so many industries. Cotton, coal, and chemicals alone have failed to participate, and the decline in these very important staples is the *amari aliquid* of the Board of Trade returns. The coal shipments show a modest increment in tonnage, but a decline of £1,928,630 in the value, which is due to comparison being made with a year in which prices had been raised by the 1893 strike. The falling off in chemicals is practically confined to manures, but alkali and bleaching materials have declined in value, though the quantities shipped were larger.

**DESTRUCTIVE FIRE AT LITTLEBOROUGH.**—About half-past two o'clock last Monday, two police officers, while on duty at Littleborough, discovered that the oil manufactory at Cleggswood, near Littleborough, belonging to Mr. James Butterworth was on fire. They raised an alarm, and the Littleborough Fire Brigade were soon at the scene. The building was one storey in height, fifty yards in length, and thirty yards in breadth. The fire is supposed to have originated in a large quantity of pressed manure, which was stored in one corner of the building. There was a large quantity of oil in another part of the premises. Owing to the inflammable condition of the property, the building was soon destroyed. The damage is estimated at £2,000. The property was not insured. On Sunday evening Mr. Butterworth noticed the manure smouldering, and his son threw water upon it.

**TANNING MATERIALS IN 1895.**—The year opened with a moderate demand for ground Adelaide Mimosa bark at £9. 15s. to £10., and good Portland £1. cheaper; these prices stiffened about midsummer to the extent of 10s. a ton, but, larger quantities arriving, the advance has been lost, and quotations are rather lower at the finish of the year than at the commencement. Gambier kept a steady course until the end of April, when the general excitement in the leather market caused a sudden leap of £4. to £5 a ton for spot and 30s. for arrival; the extravagant quotations for spot soon began to yield, and in July 21s. was taken for spot and 20s. for arrival; since then the market has been weak, present values being—for spot, 19s. 6d., and arrival, 18s. 6d. Valonia: £12. to £13. 10s. may be quoted as the opening prices of the year for fair to good Smyrna; about midsummer, the reports of the new crop being favourable and tanners well supplied, no disposition was evinced to operate at importers' quotations; hence very little business has been transacted during the later months of the year. Holders are showing a desire to meet buyers, and some good samples are now offering at £12. to £12. 10s., and fair quality £11. to £11. 10s.

## Market Reports.

### TAR AND AMMONIA PRODUCTS.

The position of tar products in general is steady, makers being well sold. Benzols are firm at 2s. 3d. for 90's and 2s. for 50/90's. There is no alteration in carbolic acids, which are steady at 1s. 9½d. for 60% crude, and 6½d. for 40% crystals. Solvent naphtha remains at 1s. 6d. and crude 10d. Creosote and anthracene unaltered. Pitch keeps stationary at 37s., f.o.b., East Coast.

Sulphate of ammonia is steadier, and the position of forward is rather better when considered in relation with spot values. Beekton still stands at £9., London outside makes £8. 12s. 6d., Liverpool £8. 12s. 6d., Hull £8. 11s. 3d., and Leith £8. 10s. Forward offering at £8. 15s., February-March, and £8. 17s. 6d. for March-April delivery. Nitrate of soda quiet.

### THE METAL MARKETS.

**LONDON, WEDNESDAY.**—Pig iron, firm: Scotch warrants closed at 44s. 11d.; Middlesbrough, 36s. 2½d. cash, and hematite, 45s. 11d. Copper, firm: Chili bars, G. O. B.'s and G. M. B.'s closed at £41. 6s. 3d. to £41. 11s. 3d. cash, and £41. 13s. 9d. to £41. 18s. 9d. three months. Tin, firmer: Straits closed at £59. 5s. to £59. 15s. cash, and £59. 17s. 6d. to £60. 7s. 6d. three months. Australian, £60.; English ingots, £62. 10s. to £63. Lead, easy: Spanish, £11. 5s.; English, £11. 7s. 6d. to £11. 10s.; Silesian spelter, ordinary, £14. 10s. to £14. 11s. 3d. Nickel, 1s. 1½d. Antimony, £30. 5s. Quicksilver: first hands, £7. 7s. 6d.; second hands, £7. 6s. Copper shares, steady: Cape, 1½ to 2½; Copiapo, 1¾ to 2; Libiola, 2¾ to 2¾; Mason and Barry, 2½ to 2¾; Rio Tinto, 14¾ to 14¾; Tharsis, 4½ to 4¾.

**GLASGOW, WEDNESDAY.**—Market steady, with moderate business. Scotch done at 44s. 11½d., 45s., and 44s. 11½d. cash, also at 45s. 2d., 45s. 2½d., and 45s. 1½d. one month; closing with buyers at 44s. 11½d. cash, sellers ask 45s. Cleveland done at 36s. 4½d. one month; closing with buyers at 36s. 2½d. cash, sellers ask 36s. 3d. Cumberland hematite done at 45s. 11d. cash; closing with buyers at 45s. 11d. cash, sellers ask 46s. Middlesbrough hematite closes with buyers at 44s. cash, sellers ask 44s. 2d.

### LIVERPOOL MINERAL MARKET.

There is little alteration in our market to report this week, as it has ruled generally steady. Manganese arrivals have continued to somewhat improve, but they have gone into consumption, whilst stocks have been drawn upon, and prices have therefore continued firm, with an upward tendency. Ground manganese continues to meet with a good demand at £6., £8., £10., and £12. 10s. per ton, according to quality. Manganiferous iron ore is unaltered at last quotations, 16s. to 17s. 6d. per ton, c.i.f. Chrome ore: Arrivals have somewhat increased, but are going into direct consumption against contracts; what little is in stock has been drawn upon, and prices continue unchanged at the last quotations—70s. to 100s. and 105s. per ton, according to grade. Bauxite is in good demand at 20s. per ton for first, 16s. for second, and 12s. for third quality, f.o.b., in cargoes. French chalk: The arrivals continue steady, but sales have increased on account of the reopening of the mills, and therefore prices continue firm, especially for "Angel White" brands, which are in good request, at 70s. to 75s., 80s. to 90s., and 100s. to 110s. per ton, according to grade. Wolfram and scheelite continue firm; stocks are now practically nil. Arsenic is firm at full prices. Fuller's earth: "Emerald" and other brands are steady at 50s. for lump, 55s. for ground, and 70s. per ton for impalpable powder. Rottenstone is scarcer and bringing full figures—£8. 10s. to £15. per ton, according to quality. Ochres and umbers are unchanged, French J.C. ochre being done at 85s. per ton, and primeumber at 40s. to 45s. per ton. Oxides of iron are selling freely at £6 to £10. per ton for good staining qualities, and prime grades at from £18. to £20. per ton. Carbonate of barytes is unchanged, with an upward tendency. Sulphate of barytes is without change; prime quality is scarce, and brings full prices. Fluor and feldspars are unaltered, and the demand continues steady at full figures. Emery stone: There are practically no stocks, and sales to arrive have been made at full figures. Mica: The demand is steady at £15., £18. and £25. per ton for prime ground qualities. Bog ore is in moderate demand at 22s. 6d. per ton. Plumbago: The demand for founders' and lubricating qualities continues unchanged at £6. to £10. per ton, prime powdered Ceylon qualities being done at £15. to £20. per ton. Pumice stone: Lump is steady; there is a better demand for the powdered at £7. to £10. per ton. Iron ore is still quiet at about 10s. per ton; Spanish and other qualities quiet, but firm at unchanged prices.

### MISCELLANEOUS CHEMICAL MARKET.

Business is active, and makers are well under orders for all the products of the alkali trade. Caustic soda continues to have an advancing tendency, and there is good demand for export. Spot prices are, meantime, unchanged, viz.:—F.o.b. Liverpool, 77%, £9. 7s. 6d.; 74%, £8. 10s.; 70%, £7. 10s.; 60%, £6. 10s. per ton, 10-ton lots and upwards. Bleaching powder is still in active inquiry, at £7. 10s. f.o.b. Liverpool; f.o.b. Tyne, £6. 15s. per ton. Chlorate of potash remains at 4½d., though some small resales have been done at ¼d. lower. Chlorate of soda, 6½d. per lb. For ammonia alkali, 58% makers' price is firm at £3. 7s. 6d. bags, f.o.b., and £3. 15s. f.o.b., in casks. Some resale lots are offered at 2s. 6d. per ton lower, but there is no material quantity to be had thereat. Sulphate of copper lower, at £15. 12s. 6d. to £15. 15s., f.o.b. Nitrate of soda is unchanged in position, and selling on the spot at 7s. 6d. per cwt. Acetates of lime are slightly firmer, but spot prices nominally unchanged, at £5. 5s. and £8. per ton respectively, c.i.f., for brown and grey quality. Acetate of soda in good request, at £14. 11s., c.i.f. White acetate of lead quiet, at £21. 10s., c.i.f. Brown sugar of lead scarce. Acetic acid without change. Yellow prussiate of potash, 7¾d. to 8d., according to make. Cyanide 98/100% selling at 1s. 3d. to 1s. 4d. per lb. White powdered arsenic continues scarce. Aniline oil and salt are firmer in price, owing to position of raw material. Murate of ammonia steady, at £22. 15s. to £23. Carbolic crystals still in good demand, and price firm. Sulphocyanides quiet, and prices unaltered. Zinc salts firm. On the whole, trade is reported rather quiet in the manufacturing districts.



## LIVERPOOL OIL AND COLOUR MARKET.

WEDNESDAY.

**OILS.**—There is nothing doing in palm oil, the market being very dull and prices uncertain. Olive keeps steady in price, with a fairly good consumptive demand. Linseed continues firm at 21s. 6d. to 22s. per cwt. for Liverpool makes in export casks. Cottonseed is quiet, and prices are easy at 17s. to 17s. 6d. per cwt. for Liverpool refined. There is but a poor inquiry for castor oil, yet sellers are firm at 2½d. per lb. for good seconds Calcutta, and 2¾d. per lb. for first pressure French. Tallow is only moderate, the inquiry being small, though prices are favourable. Resin is not likely to change much from its present position while prices remain so firm, though the inquiry certainly keeps fairly good. Spirits of turpentine are rather easier than last week, though they close steadier than they were a day or so since. Spot parcels are obtainable at 21s. 9d. per cwt. Petroleum steady: American 7¾d. to 8½d., Russian refined 7d. per gallon.

**COLOURS** are steady, without alteration in prices. Ochres: Oxfordshire, common, £10., medium, £12., best, £15. Derbyshire, common, 40s.; medium, 50s., best, 60s.; Welsh, best, 90s., seconds, 50s., and common, 18s.; Irish, Devonshire, 40s. to 45s.; French, J.C., 60s. to 65s.; M.C., 65s. to 67s. 6d. Umber: Turkish quiet; Devonshire, 50s. to 55s. White lead, £16. Red lead unchanged. Venetian red, £6. to £10. Cobalt: Prepared oxide, 9s. 9d.; black, 9s.; blue, 6s. Zaffres: No. 1, 3s. 6d.; No. 2, 2s. 6d. Oxide of iron: Common, £7.; medium, £10.; finest, £20. Zinc oxide, £22. 10s. to £25.

## TYNE CHEMICAL REPORT

TUESDAY.

As yet there is very little doing in the chemical trade. Soda crystals are quoted at £2. 2s. 6d. per ton, gross weights, locally. Sulphur continues scarce at £3. 17s. 6d. per ton. Caustic 76/77° £9. 5s. and 70° £7. 10s. to £7. 15s. per ton. Other prices as under:—

Bleaching powder, softs, £7. 5s. per ton, nett; hards, £7. 10s. per ton, nett; caustic soda, 76/77°, £9. 5s. per ton, nett; do., 70°, £7. 15s. per ton, nett; recovered sulphur, 2 cwt. bags, £3. 17s. 6d. per ton, nett; soda ash, 48%, £3. 15s. per ton, nett; do., 52%, £3. 17s. 6d. per ton, nett; do., 56%, £4. per ton, nett; alkali, 36%, £2. 15s. per ton, nett; white alkali, 48%, £4. 10s. per ton, nett; do., 50%, £4. 15s. per ton, nett; do., 52%, £5. per ton, nett; hyposulphite of soda, 5-7 cwt. casks, £6. 5s. per ton, nett; do., 1 cwt. kegs, £7. per ton, nett; silicate of soda, 75° Tw., £2. 12s. 6d. per ton, nett; do., 100° Tw., £3. per ton, nett; do., 140° Tw., £3. 7s. 6d. per ton, nett; soda crystals, casks, £2. 2s. 6d. per ton, nett; gross weight; do., 2 cwt. bags, £2. 2s. 6d. per ton, nett weight; chlorate of potash, 5d. per lb., less 6%; pearl hardening, £3. per ton, nett; pure white sulphate of alumina, £3. 17s. 6d. per ton, nett; blanc fixe, £7. 5s. per ton, nett; chloride of barium, refined crystals, £6. 15s. per ton, nett; do., 90/95%, crude calcined, £6. per ton, nett; sulphide of barium, crystals, £4. 15s. per ton, net; carbonate of alumina, £30. per ton, nett; aluminate of soda, £30.

**SALT.**—South Durham salt is steady at 9s. 6d. per ton, f.o.b., Tees.

**COALS.**—Trade is rather steadier, and the prospect is somewhat better. There is a good demand for best steam and gas coals. Coke is firm. To-day's quotations are:—Best Northumbrian steam, 8s. to 8s. 3d. per ton; second qualities, 7s. to 7s. 3d. per ton; small steam, 3s. 9d. to 4s. per ton; gas coal 6s. 9d. to 7s. 3d. per ton; bunker coals, unscreened, 6s. to 7s. per ton; household coal, steady, 10s. to 11s. per ton; coke, 14s. 6d. to 15s. per ton.

## WEST OF SCOTLAND CHEMICALS.

GLASGOW, TUESDAY.

Since last report a serious rupture of an overt character has taken place in the solid paraffin combine between the Scotch and American producers. The agreement has for long been known to be sickly, but now the Americans openly refer to the matter as once more at an end, owing to the underselling that has been going on. The prices of scale and wax given below are still the agreement prices, and some makers are faithful to that yet, but they have undoubtedly been purchased for less. Parties to the ruptured agreement are to meet in London next week to confer and ascertain if there is any remedy. Mineral oils are steady at the old quotations, and the burning variety is in great request *ex contracts*, this being the height of the season. Sulphate of ammonia is possibly a shade less feeble, but no more than a shade, and nothing is talked of for forward. The general market is quiet, and a few of the works have not yet resumed production after the holidays, but prices on the whole are very well maintained, and improvement is looked for if foreign complications do not seriously intervene.

Chief prices current are:—Soda crystals, £2. 2s. 6d., nett, Tyne; soda ash, 48/56°, £3. 15s. to £4. 15s. nett, Tyne; white alkali,

48/52°, £4. 10s. to £5. nett, Tyne; alum in lump, £5. 10s. nett, Glasgow; caustic soda, white, 76° £9. 5s., 70/72° £7. 10s., 60/62° £6. 10s., and cream 60/62° £6. 10s., all nett, Liverpool; bleaching powder, £6. 15s. to £7. 5s. nett, Tyne; saltcake, 27s. 6d.; borax, English, refined, £20., and boracic acid, £30. nett, Glasgow; bicarbonate of soda, 5-cwt. casks, £6. 10s., and 1-cwt. casks £6. 15s. nett, Liverpool; bichromate of potash, 4½d. nett, for Scotch and English deliveries (for export, 4¼d. nett, f.o.b. Glasgow); bichromate of soda, 3¾d. nett, for Scotch and English deliveries (for export, 3½d. nett, f.o.b. Glasgow); chlorate of potash, 4¼d. less 5%, Liverpool; nitrate of soda, 7s. 7½d. to 7s. 10½d.; sulphate of ammonia, £8. 10s. prompt, f.o.b. Leith; sal ammoniac, first and second white, £39. and £37. nett, any port; sulphate of copper, £16. 2s. 6d. to £16. 7s. 6d., less 5%, Liverpool; paraffin scale, hard, 2½d., and soft, 1¾d. to 2½d. per lb.; paraffin wax, 120° semi-refined, 2¾d. to 2¾d.; paraffin spirit (naphtha), 7½d. to 8d. per gallon; paraffin oil (burning) No. 1, 6½d., and crystal, 6¾d., at works, for Scotch buyers (English sales about ½d. lower); ditto (lubricating) 865° £4. 15s. to £5., 885° £5. 5s. to £5. 10s., and 890/895° £5. 10s. to £6. Week's imports of sugar at Greenock were 15,318 bags beet unrefined, and 900 bags beet refined.

## HULL PAINT, OIL, AND COLOUR REPORT.

TUESDAY.

**OILS.**—The summary of the year's volume of business of this port does not show any decided improvement upon the past year, still, considering the intense competition of other ports, Hull has fairly well maintained its position. Some sections of trade have been drawn to other ports owing to some extent to the inadaptability of the railway companies interested here. The import of linseed this week has been 19,320 qrs. Linseed oil is about 7s. 6d. per ton dearer, closing very firm at 19s. per cwt. naked spot. This is also the quotation for Jan.-April or May-August. Boiled and refined ditto, £1. to £2. per ton extra. Export for week, 480 cwts. During the week 7,068 tons of cottonseed have arrived here from Alexandria. Refined cotton oil steady at 14s. 10½d. naked spot, Jan.-April quoted 15s. 4½d., and May-Aug. worth 16s. Crude, 13s. 6d. naked spot. Barrels, 30s. per ton extra. Casks, £1. per ton extra. Export of refined, 3,160 cwts. Olive oil easier. Spanish can be bought at £31. per tun. Spirits of turpentine dearer, 22s. 6d. per cwt. Cod oils from £17. to £19. per ton. Castor oil from 2½d. to 2¾d. per lb. for first pressure. Boiled siccative oil, £13. per ton. Liquid soap, £16. per ton.

**CAKES.**—Linseed cakes dearer; 95% pure, £6. 5s.; Russians, £5. 12s. 6d. to £5. 15s. Oil cakes, £5. 2s. 6d. to £5. 5s. Cotton cakes, in sympathy with seed, are dearer; best makes, £3. 15s. to £3. 17s. 6d.; seconds, £3. 10s. to £3. 12s. 6d. Rape cakes: Black Sea, £2. 7s. 6d.; East India, £3. 7s. 6d.; feeding, £3. 12s. 6d. per ton.

**PAINTS.**—Makers open the year with a satisfactory prospect, which the continued open weather tends to foster. Prices are: White lead, £16. per ton; red lead, £14.; oxide zinc from £22 to £26; dry mineral colours unchanged from £4. to £8. per ton; ultramarines from 3d. to 8d. per pound; black, blue, red oxide, venetian red, green and yellow ochre paints from £11. per ton; ready mixed paints, in lever tins, one, two, four, and seven pounds, from £24. per ton; paint remover, 25s. per cwt.; imperial black varnish, £5. 10s. per ton.

## New Companies.

**Burnham Syndicate, Limited.**—CAPITAL, £100,000, in £1. shares, divided into 25,000 "A" and 75,000 "B" shares. This company has been formed to enter into an agreement with Messrs. Fry and Everitt, and to carry on the business of mine owners, chemists, metallurgists, &c. The subscribers to the memorandum of association are:—W. C. Houstoun, 8, Stanhope Terrace, Hyde Park, gentleman; H. E. Fry, 28, Billiter Buildings, E.C., merchant; J. Ewaat, 4, Fenchurch-street, E.C., merchant; E. Wood, 4, Fenchurch-street, E.C., merchant; H. E. Fry, jun., West Wickham, Kent, gentleman; H. R. Fry, West Wickham, Kent, gentleman; R. H. Everitt, 28, Billiter Buildings, E.C., merchant.

**Imperial Enamel Company, Limited.**—CAPITAL, £20,000, in £1. shares. This company has been formed to acquire the enamelling business of the Imperial Enamel Company, now carried on at Water-lane, Birmingham. The subscribers to the memorandum of association are:—B. Baugh, Park-road, Moseley, Birmingham, manufacturer; R. W. Baugh, Park-road, Moseley, Birmingham, manufacturer; A. H. Cooper, Bradford-street, Birmingham, manufacturer; G. H. Cartland, Hazlewood Hall, King's Heath, Birmingham, barrister; J. Rowlands, 41, Temple Row, Birmingham, solicitor; H. H. C. Horsfall, Penns Hall, Erdington, manufacturer; J. F. H. Cartland, Birmingham, manufacturer.

**Matthew's French White Lead Company, Limited.**—CAPITAL, £30,000, in £1. shares. This company has been formed to carry on



the business of white lead, lead, and colour makers, and chemists, drysalts, &c. The subscribers to the memorandum of association are: C. S. Hutchinson, 14, Kidbrook Park-road, Blackheath, Major-general; S. H. Fisher, 3, Crown Office Row, Temple, barrister; S. C. Fox, 105, Clapton Common, N.E., Esq.; V. J. Barton, 15, Wallbrook, E.C., iron merchant; T. A. Capron, Grays, Essex, solicitor; A. J. Walter, Streatham Common, S.W., barrister; W. Neill, 2, St. Alban's-road, Kensington, barrister.

**Primitiva Nitrate Company, Limited.**—CAPITAL, £40,000., in £1. shares. This company has been formed to acquire the property of the old Primitiva Nitrate Company, Limited, being a reconstruction of the same. The subscribers to the memorandum of association are:—T. Brocklebank, 20, Bixteth-street, Liverpool, shipowner; R. R. Lockett, 12, King-street, Liverpool, merchant; G. R. Cax, jun., 012, Exchange Buildings, Liverpool, broker; J. E. Rayner, 12, Rumford-place, Liverpool, merchant; J. W. Hebblethwaite, 36, Castle-street, Liverpool, banker; J. J. Langley, Bank Chambers, Cook-street, Liverpool, merchant; W. J. Lockett, 12, King-street, Liverpool, merchant.

**D. and W. Gibbs, Ltd.**—CAPITAL, £140,000., in shares of £100. each (9,200 £5. cumulative preference). This company has been formed to acquire and carry on the business of soapmakers, oil refiners and dealers, glycerine distillers, etc., now carried on by D. and W. Gibbs, at 16, Finsbury Circus, E.C., and Abbey Chemical Works, Stratford, E. The subscribers to the memorandum of association are:—D. A. Gibbs, 16, Finsbury Circus, E.C., soap manufacturer; W. A. Gibbs, 16, Finsbury Circus, E.C., soap manufacturer; W. S. Collins, 16, Finsbury Circus, E.C., soap manufacturer; D. C. Gibbs, 16, Finsbury Circus, E.C., soap manufacturer; F. L. A. Gibbs, 16, Finsbury Circus, E.C., soap manufacturer; K. V. Gibbs, 16, Finsbury Circus, E.C., soap manufacturer; W. R. Collins, 16, Finsbury Circus, E.C., soap manufacturer.

**H. Harris, Sons, and Co., Ltd.**—CAPITAL, £12,000., divided into 300 preference shares of £10. each and 3,600 ordinary shares of £2. 10s. each. This company has been formed to acquire the business of washing powder, soap, blacklead, and polish manufacturers, now carried on by H. Harris, as H. Harris, Sons, and Co., at the Tower Works, Birmingham. The subscribers to the memorandum of association are:—W. T. Johnston, 57, Jamaica-row, Birmingham, factor; G. Turley, 59, Edgbaston-street, Birmingham, druggist; P. A. Debney, 69, Jamaica-row, Birmingham, grocer; S. W. Maidment, 26, Upper Highgate-street, Birmingham, grocer; J. C. Harris, 367, Moseley-road, Birmingham, traveller; J. B. Jackson, 164, Conybeare-street, Birmingham, grocer; S. H. Harris, 58, Upper Highgate-street, Birmingham, manufacturer.

**West of Scotland Chemical Co., Ltd.**—CAPITAL, £1,200, in £5. shares. This company has been formed to carry on the business of coke and gas manufacturers, tar distillers, colliery owners, and importers and exporters of all kinds of chemicals. The subscribers to the memorandum of association are:—W. Pollok, Portland Park, Hamilton, solicitor; W. Ewing, Hamilton, gas engineer; C. Templeton, Portland Park, Hamilton, retired merchant; W. S. Templeton, Portland Park, Hamilton, student; J. Pollok, Hamilton, solicitor; R. M. MacLay, Glasgow, C.A.; J. Meikle, Gairbraid-street, Glasgow; chemist.

## Gazette Notices.

### PARTNERSHIPS DISSOLVED.

S. A. ARNATI and J. T. HARRISON, under the style of Arnati and Harrison Great Tower-street, E.C., chemical and general shipping agents and owners. J. EMERY and D. JACKSON, under the style of Emery and Co., Wednesbury, chemists.

## IMPORTS OF CHEMICAL PRODUCTS AT THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

| LONDON.                    |                              | Chemicals (otherwise under).— |                           | Valonia                |                           | Phosphate of Lime—          |                  |
|----------------------------|------------------------------|-------------------------------|---------------------------|------------------------|---------------------------|-----------------------------|------------------|
| Week ending December 28th. |                              | Holland, 5 pks.               | T. H. Lee                 | A. Turkey, 50 t.       | Hicks, Nash & Co.         | Belgium, 25 t.              | B. Jacob & Sons  |
| <b>Acetone—</b>            |                              | Sweden, £50                   | G. Boor & Co.             | " 50                   | F. Claydon & Co.          | " 5                         | Chemical Works   |
| Holland, 1 pk.             | Carey & Sons                 | Germany, 39 cs.               | A. & M. Zimmermann        | " 61                   | Hoare, Wilson & Co.       | " 230                       | West & Penrose   |
| <b>Alkali—</b>             |                              | Belgium, 2                    | T. Palmer                 | <b>Farina—</b>         |                           | " 200                       | Odams Manure Co. |
| France, 103 c.             | Arnati & Harrison            | Holland, 8 cks.               | W. Balchin                | France, 100 pks.       | L. & I. D. Jt. Co.        | " 180                       | Miller & Johnson |
| <b>Alum—</b>               |                              | " 30                          | "                         | U. States, 195         | J. Barber & Co.           | <b>Pitch—</b>               |                  |
| Holland, 160 pks.          | Ohlenschlager Bros.          | Germany, 77 pks.              | Carey & Sons              | Germany, 50            | R. G. Hall & Co.          | N. Russia, 660 brls.        |                  |
| <b>Antimony Ore—</b>       |                              | " 5                           | T. H. Lee                 | Holland, 50            | "                         | Germany, 92                 |                  |
| Sydney, 11 t.              | Harrold Bros.                | <b>Cream of Tartar—</b>       |                           | Sweden, 10             | Tegner, Price & Co.       | Fellows, Morton & Co.       |                  |
| Japan, 59                  | Lucas & Spencer's            | France, 9                     | B. & F. Wf. Co.           | <b>Glucose—</b>        |                           | D. Currie & Co.             |                  |
| Portugal, 50               | Wf. Ld.                      | " 10 cks.                     | F. C. Devon & Co.         | France, 100 pks.       | 100 c J. Weatherley       | <b>Plumbago—</b>            |                  |
| <b>Arsenic—</b>            |                              | " 25                          | W. C. Bacon & Co.         | Germany, 201           | 201 c. Trier, Meyer & Co. | Germany, 170 cs.            |                  |
| France, 20 pks.            | A. Carey                     | Italy, 10 brls.               | "                         | " 50                   | 400 Bennett S. S. Co.     | Ceylon, 50                  |                  |
| <b>Asbestos—</b>           |                              | <b>Dextrine—</b>              |                           | <b>Glue—</b>           |                           | E. & T. Pink                |                  |
| Italy, £860                | J. Barber & Co.              | Germany, 300 pks.             | W. Balchin                | France, 100 pks.       | 100 c J. Weatherley       | Thredder, Son & Co.         |                  |
| U. States, 466             | W. Byford                    | <b>Dyestuffs—</b>             |                           | Germany, 201           | 201 c. Trier, Meyer & Co. | <b>Potassium Carbonate—</b> |                  |
| Germany, 125               | T. H. Lee                    | <b>Argols</b>                 |                           | " 50                   | 400 Bennett S. S. Co.     | Holland, 41 c.              |                  |
| " 9                        | Craven & Co.                 | Austria, 2 pks.               | M. D. Co.                 | U. States, 50          | 300 Page, Son & East      | <b>Potassium Chloride—</b>  |                  |
| <b>Barytes—</b>            |                              | France, 13                    | B. & F. Wf. Co.           | " 350                  | 1,972 R. G. Hall & Co.    | Germany, 200 pks.           |                  |
| Holland, 127 cks.          | W. Harrison & Co.            | <b>Cochineal</b>              |                           | " 500                  | 500 Fellows, Morton & Co. | <b>Pumice Stone—</b>        |                  |
| Belgium, 200               | Leach & Co.                  | Canaries, 9 pks.              | G. S. Bruce               | " 550                  | 3,273 L. Sutro & Co.      | Italy, 2 t. 10 c.           |                  |
| Germany, 19                | S. H. Willoughby             | <b>Cutch</b>                  |                           | " 486                  | 500 Pickford & Co.        | " 8                         |                  |
| <b>Boracic Acid—</b>       |                              | E. Indies, 250 pks.           | W. H. Hindley & Co.       | <b>Lead Acetate—</b>   |                           | " 8                         |                  |
| Italy, 6 pks.              | City Coml. Wf. G. Boor & Co. | <b>Extracts</b>               |                           | Germany, 14 pks.       | F. Boehm                  | " 5                         |                  |
| <b>Bromide of Iron—</b>    |                              | U. States, 60 pks.            | A. J. Humphery            | <b>Magnesia—</b>       |                           | <b>Pyrites—</b>             |                  |
| Germany, 15 pks.           | A. & M. Zimmermann           | Denmark, 1                    | J. Sinclair & Son         | Holland, 30 pks.       | Beresford & Co.           | Spain, 1,960 t.             |                  |
| <b>Bromine—</b>            |                              | E. Indies, 23 cts.            | Parsons & Keith           | <b>Manganese Ore—</b>  |                           | Italy, 7,500 lbs.           |                  |
| Germany, 20 pks.           | A. & M. Zimmermann           | " 76                          | 3 bxs. L. & I. D. Jt. Co. | France, 10 t.          | T. Rey & Co.              | <b>Quicksilver—</b>         |                  |
| <b>Camphor—</b>            |                              | " 10                          | G. Rahn & Co.             | <b>Manure—</b>         |                           | Italy, 7,500 lbs.           |                  |
| Germany, 3 pks.            | L. & I. D. Jt. Co.           | " 6                           | G. S. N. Co.              | Germany, 10 t.         | A. Hunfer & Co.           | <b>Saltpetre—</b>           |                  |
| <b>Caoutchouc—</b>         |                              | " 21                          | P. & O. Co.               | N. Zealand, 63         | Cornwell, Son & Co.       | Germany, 14 cks.            |                  |
| Penang, 5 c.               | E. Boustead & Co.            | " 1 cs.                       | Montgomerie & Co.         | Germany, 20            | W. G. Blagden             | " 80                        |                  |
| France, 120                | W. Balchin                   | " 22                          | Walker, Munie & Co.       | <b>Methyl Alcohol—</b> |                           | " 42                        |                  |
| Madagascar, 39             | Procter Bros.                | <b>Logwood</b>                |                           | Belgium, 6 dms         | Stein Bros.               | <b>Sodium Hyposulphate—</b> |                  |
| Singapore, 106             | L. & I. D. Jt. Co.           | B. W. I., 1 t.                | L. & I. D. Jt. Co.        | <b>Mica—</b>           |                           | Holland, 17 pks.            |                  |
| " 74                       | Huttenbach & Co.             | <b>Orchella</b>               |                           | U. States, £27         | Allan Bros. & Co.         | <b>Sodium Sulphate—</b>     |                  |
| France, 136                | Stiebel Bros.                | Ecuador, 248 pks.             | Prop. Bull Wf.            | Adelaide, 56           | W. Lund                   | Holland, 128 pks.           |                  |
| <b>Castor Oil—</b>         |                              | <b>Shumac</b>                 |                           | <b>Molasses—</b>       |                           | <b>Starch—</b>              |                  |
| Portugal, 80               | L. & I. D. Jt. Co.           | Italy, 25 pks.                | W. France & Co.           | Denmark, 1 ck. 5 c.    | A. Lyle & Sons, Ltd.      | Belgium, 168 pks.           |                  |
| Italy, 31 cs.              | J. Knill & Co.               | " 700                         | J. Kitchin, Ltd.          | <b>Nitre—</b>          |                           | Germany, 400                |                  |
| " 5                        | L. & I. D. Jt. Co.           | " 100                         | J. Knill & Co.            | Sweden, 50             | South Devon Wf. Co., Ltd. | Holland, 236                |                  |
| Aus. Terr., 25             | A. M. Serena & Co.           | " 1,500                       | Bevington & Sons          | <b>Ochre—</b>          |                           | " 190                       |                  |
| <b>Caustic Potash—</b>     |                              | " 30                          | Hicks, Nash & Co.         | Holland, 7 cks.        |                           | U. States, 100              |                  |
| France, 25 pks.            | F. Boehm                     | " 14                          | J. Terry & Co.            | <b>Stearine—</b>       |                           | Holland, 40                 |                  |
| France, 20 pks.            | Spies Bros. & Co.            | <b>Tanner's Bark</b>          |                           | France, 70 bgs.        |                           | G. Boor & Co.               |                  |
|                            |                              | Belgium, 36 t.                | Leach & Co.               | Belgium, 59            |                           | H. Hill & Sons              |                  |
|                            |                              | " 10                          | Arnati & Harrison         |                        |                           |                             |                  |



|                      |           |                            |
|----------------------|-----------|----------------------------|
| <b>Sulphur</b> —     |           |                            |
| Italy,               | 20 t.     | C. Tennant, Sons & Co.     |
| <b>Talc</b> —        |           |                            |
| Germany,             | £12       | T. H. Lee                  |
| <b>Tar</b> —         |           |                            |
| Channel Is.,         | 582 brls. | Burt, Boulton, & Co.       |
| <b>Turpentine</b> —  |           |                            |
| N. Russia,           | 106 brls. | London Oil Strge. Co.      |
| "                    | 52        | F. & S. Chiesman           |
| U. States,           | 3,626     | London Oil Strge. Co.      |
| <b>Ultramarine</b> — |           |                            |
| Belgium,             | 2 cks.    | W. Harrison & Co.          |
| Holland,             | 12        | Elkan & Co.                |
| "                    | 20        | Thames S. T. & L. Co. Ltd. |
| <b>Varnish</b> —     |           |                            |
| Germany,             | 1 ck.     | T. H. Lee                  |
| U. States,           | 123 pks.  | Pinchin, Johnson, & Co.    |
| "                    | 2         | Allan Brs. & Co.           |
| <b>Verdigris</b> —   |           |                            |
| Holland,             | 5 cks.    | J. W. Drysdale & Co.       |
| <b>White Lead</b> —  |           |                            |
| Holland,             | 20 cks.   | A. & M. Zimmermann         |
| Belgium,             | 20        | Leach & Co.                |
| "                    | 20        | H. B. Alder & Co.          |
| Holland,             | 18        | J. Owen                    |
| "                    | 30        | Perkins & Homer            |
| <b>Wood Pulp</b> —   |           |                            |
| Sweden,              | 80 bls.   | Johnsen & Jorgensen        |
| "                    | 740       | E. J. & W. Goldsmith       |
| "                    | 250       | W. D. Cork                 |
| Denmark,             | 260       | Tough & Henderson          |
| Germany,             | 609       | W. Friedlaender            |
| Norway,              | 2,650     | W. E. Bott & Co.           |
| Holland,             | 38        | H. Johnson & Sons          |
| Sweden,              | 5,424     | Tough & Henderson          |
| Norway,              | 500       | "                          |
| "                    | 164       | W. G. Taylor & Co.         |
| "                    | 2,290     | Moreton Cox Brs.           |
| Holland,             | 1,200     | E. J. & W. Goldsmith       |
| "                    | 19        | J. Spicer & Son            |
| Sweden,              | 50        | Henderson, Craig, & Co.    |
| "                    | 816       | C. S. Lovell               |
| <b>Zinc Oxide</b> —  |           |                            |
| Germany,             | 500 cks.  | Soundy & Sons              |
| Holland,             | 82        | J. Matton                  |
| "                    | 50        | M. Ashby, Ltd.             |

## LIVERPOOL.

Week ending December 26th.

|                                          |             |                             |
|------------------------------------------|-------------|-----------------------------|
| <b>Acetanilide</b> —                     |             |                             |
| Rotterdam,                               | 2 cks.      |                             |
| <b>Asbestos</b> —                        |             |                             |
| New York,                                | 50 bgs.     | E. Franham                  |
| <b>Bone Meal</b> —                       |             |                             |
| Bombay,                                  | 4,372 bgs.  |                             |
| <b>Boric Acid</b> —                      |             |                             |
| Leghorn,                                 | 50 cks.     |                             |
| <b>Borax</b> —                           |             |                             |
| Santander,                               | 5 cks.      | R. Huth & Co.               |
| <b>Castor Oil</b> —                      |             |                             |
| Marseilles,                              | 12 brls.    | J. J. Mack & Son            |
| "                                        | 25 cs.      | Langstaff & Co.             |
| Leghorn,                                 | 315         | 16 106 cks.                 |
| <b>Chemicals (otherwise undescribed)</b> |             |                             |
| Rouen,                                   | 59 cks.     | Co-op. W'sale Society, Ltd. |
| <b>Cobalt Oxide</b> —                    |             |                             |
| Rotterdam,                               | 10 cs.      |                             |
| <b>Colours</b> —                         |             |                             |
| Antwerp,                                 | 3 cs.       |                             |
| Hamburg,                                 | 20          | 8 cks.                      |
| <b>Copper Acetate</b> —                  |             |                             |
| Marseilles,                              | 10 brls.    |                             |
| <b>Cottonseed Oil</b> —                  |             |                             |
| N. Orleans,                              | 1,338 brls. |                             |
| New York,                                | 100         |                             |
| <b>Cream of Tartar</b> —                 |             |                             |
| Oporto,                                  | 4 cks.      | Baird Brs.                  |
| Barcelona,                               | 5           | Sachse & Klemm              |
| <b>Dyestuffs</b> —                       |             |                             |
| Argols                                   |             |                             |
| Bordeaux,                                | 4 cks.      |                             |
| Cochineal                                |             |                             |
| Teneriffe,                               | 33 bgs.     | Brown Brs. & Co.            |
| <b>Cutch</b>                             |             |                             |
| Rangoon,                                 | 1,233 bxs.  |                             |

|                             |                   |                             |
|-----------------------------|-------------------|-----------------------------|
| <b>Divi Divi</b>            |                   |                             |
| Hamburg,                    | 265 bgs.          |                             |
| <b>Extracts</b>             |                   |                             |
| New York,                   | 5 bxs. 15 brls.   | W. Bingham                  |
| "                           | 50                |                             |
| Marseilles,                 | 117               |                             |
| Fiume,                      | 200               | Oak Extract Co., Ltd.       |
| Rouen,                      | 250 cks. 40 cs.   | Co-op. W'sale Society, Ltd. |
| <b>Saffron</b>              |                   |                             |
| Valencia,                   | 2 cs.             |                             |
| <b>Sumac</b>                |                   |                             |
| Palermo,                    | 250 bgs.          | H. Rooke, Son & Co.         |
| "                           | 350               | 2,240 bxs. 300 bls.         |
| Barcelona,                  | 200               | A. Ruffer & Sons            |
| "                           | 350               | N. W. Jackson               |
| <b>Trieste, Valonia</b>     |                   |                             |
| Syra,                       | 753 bgs.          |                             |
| Patras,                     | 508               |                             |
| <b>Farina</b> —             |                   |                             |
| Hamburg,                    | 1,400 bgs.        | H. Tyrer & Co.              |
| Fiume,                      | 80                |                             |
| <b>Glucose</b> —            |                   |                             |
| Hamburg,                    | 5 cks.            |                             |
| Boston,                     | 10 brls.          |                             |
| <b>Glue</b> —               |                   |                             |
| Hamburg,                    | 40 bgs.           |                             |
| Rouen,                      | 44 cks. 5 cs.     | Co-op. W'sale Society, Ltd. |
| "                           | 8 cks.            | R. J. Francis & Co.         |
| <b>Infusorial Earth</b> —   |                   |                             |
| Rotterdam,                  | 175 bgs.          |                             |
| <b>Limestone</b> —          |                   |                             |
| Antwerp,                    | 2 cs.             |                             |
| <b>Manganese Ore</b> —      |                   |                             |
| Vizagapatam,                | 695 t.            | Wigan Coal & Iron Co.       |
| <b>Mineral White</b> —      |                   |                             |
| Fiume,                      | 100 bgs.          |                             |
| <b>Ochre</b> —              |                   |                             |
| Marseilles,                 | 73 brls. 21 pkgs. |                             |
| "                           | 110               |                             |
| Rouen,                      | 95 cks.           | Co-op. W'sale Society, Ltd. |
| "                           | 40                | R. J. Francis & Co.         |
| <b>Paraffin Scale</b> —     |                   |                             |
| New York,                   | 960 brls.         | Thompson & Bedford          |
| <b>Phosphate Rock</b> —     |                   |                             |
| Fernandina,                 | 2,196 t.          |                             |
| <b>Phosphorus</b> —         |                   |                             |
| Norfolk, Va.,               | 10 cs.            |                             |
| <b>Pitch</b> —              |                   |                             |
| Hamburg,                    | 60 brls.          |                             |
| Rouen,                      | 80 cks.           | Co-op. W'sale Society, Ltd. |
| <b>Potash</b> —             |                   |                             |
| Rouen,                      | 44 cks.           | Co-op. W'sale Society, Ltd. |
| <b>Potassium Chloride</b> — |                   |                             |
| Hamburg,                    | 910 bgs.          | H. Tyrer & Co.              |
| <b>Pumice Stone</b> —       |                   |                             |
| Hamburg,                    | 1 pkge.           |                             |
| Messina,                    | 30 bgs.           |                             |
| <b>Pyrites</b> —            |                   |                             |
| Huelva,                     | 1,928 t.          | H. R. Merton & Co.          |
| "                           | 3,487             | Matheson & Co.              |
| <b>Saltpetre</b> —          |                   |                             |
| Hamburg,                    | 20 kgs. 1 ck.     |                             |
| <b>Soap</b> —               |                   |                             |
| Antwerp,                    | 15 cs.            |                             |
| Rotterdam,                  | 2                 | 1 bg.                       |
| Constantinople,             | 25                | 150 bxs.                    |
| Marseilles,                 | 63                | 500                         |
| New York,                   | 215               |                             |
| Naples,                     | 120               |                             |
| Rouen,                      | 120               | Co-op. W'sale Society, Ltd. |
| <b>Soapstone</b> —          |                   |                             |
| Bordeaux,                   | 100 bgs.          | G. G. Blackwell, Sons & Co. |
| <b>Soda</b> —               |                   |                             |
| Hamburg,                    | 2 cs.             |                             |
| <b>Starch</b> —             |                   |                             |
| New York,                   | 200 bgs.          |                             |
| Antwerp,                    | 20 cs.            | J. T. Fletcher & Co.        |
| Hamburg,                    | 228               | H. Tyrer & Co.              |
| Boston,                     | 1 bd.             | J. Wilson                   |
| "                           | 1 ble.            |                             |
| <b>Stearine</b> —           |                   |                             |
| Antwerp,                    | 13 bgs.           | J. T. Fletcher & Co.        |
| "                           | 64                |                             |

|                        |                         |  |
|------------------------|-------------------------|--|
| Bordeaux,              | 8 cs.                   |  |
| New York,              | 5 tcs.                  |  |
| <b>Sulphur</b> —       |                         |  |
| Catania,               | 50 cks. 40 cs. 100 bgs. |  |
| <b>Tallow</b> —        |                         |  |
| N. Orleans,            | 100 tcs.                |  |
| New York,              | 10 brls. 125 hds.       |  |
| Boston,                | 60                      |  |
| <b>Tartar</b> —        |                         |  |
| Bordeaux,              | 12 cks.                 |  |
| <b>Tartaric Acid</b> — |                         |  |
| Rotterdam,             | 2 cs.                   |  |
| Marseilles,            | 20 cks. 4 brls.         |  |
| Bordeaux,              | 9                       |  |
| <b>Varnish</b> —       |                         |  |
| Hamburg,               | 1 pkge.                 |  |
| <b>Verdigris</b> —     |                         |  |
| Bordeaux,              | 2 cs.                   |  |
| <b>White Lead</b> —    |                         |  |
| Rotterdam,             | 145 cks.                |  |
| <b>Wood Pulp</b> —     |                         |  |
| Rotterdam,             | 281 bls.                |  |
| <b>Zinc Oxide</b> —    |                         |  |
| Antwerp,               | 75 brls.                |  |
| <b>Zinc White</b> —    |                         |  |
| Rotterdam,             | 150 cks.                |  |

## MANCHESTER.

Week ending December 28th.

|                                          |                          |                     |
|------------------------------------------|--------------------------|---------------------|
| <b>Albumen</b> —                         |                          |                     |
| Libau,                                   | 15 cs.                   | Stott, Coker, & Co. |
| Hamburg,                                 | 10 cks.                  |                     |
| <b>Alumina Sulphate</b> —                |                          |                     |
| Rotterdam,                               | 34 cks.                  |                     |
| <b>Aluminous Cake</b> —                  |                          |                     |
| Rotterdam,                               | 50 bgs.                  |                     |
| <b>Antimony Salts</b> —                  |                          |                     |
| Rotterdam,                               | 5 cks. 5 cs.             |                     |
| <b>Barytes</b> —                         |                          |                     |
| Antwerp,                                 | 40 bgs.                  |                     |
| Rotterdam,                               | 66 cks. 50               |                     |
| <b>Chemicals (otherwise undescribed)</b> |                          |                     |
| Hamburg,                                 | 17 cks. 1 cs.            |                     |
| <b>Colours</b> —                         |                          |                     |
| Hamburg,                                 | 10 cks. 9 cs.            |                     |
| Antwerp,                                 | 7                        | 5 pkgs.             |
| Rotterdam,                               | 29                       | 58 134 brls.        |
| "                                        | 33 bxs.                  |                     |
| <b>Cream of Tartar</b> —                 |                          |                     |
| Rotterdam,                               | 20 kgs.                  |                     |
| <b>Dextrine</b> —                        |                          |                     |
| Stettin,                                 | 50 bgs. W. Popp, Ireuter |                     |
| "                                        | 20                       | Ledwistein          |
| "                                        | 103                      |                     |
| <b>Dyestuffs</b> —                       |                          |                     |
| <b>Alizarine</b>                         |                          |                     |
| Rotterdam,                               | 73 cks.                  |                     |
| <b>Annatto</b>                           |                          |                     |
| Bordeaux,                                | 15 cks.                  | J. & P. Hutchison   |
| <b>Extracts</b>                          |                          |                     |
| Rotterdam,                               | 15 cks.                  |                     |
| Treport,                                 | 36                       |                     |
| <b>Sumac</b>                             |                          |                     |
| Bordeaux,                                | 50 bgs.                  | J. & P. Hutchison   |
| <b>Farina</b> —                          |                          |                     |
| Stettin,                                 | 30 bgs.                  | E. J. Arnatt        |
| "                                        | 50                       | T. M. Duche & Sons  |
| Hamburg,                                 | 300                      |                     |
| "                                        | 400                      |                     |
| <b>Glucose</b> —                         |                          |                     |
| Stettin,                                 | 1,000 bgs.               | J. F. Dhlmann       |
| <b>Glue</b> —                            |                          |                     |
| Hamburg,                                 | 100 bgs. 8 cks. 20 bls.  |                     |
| Rotterdam,                               | 120                      | 185 cs.             |
| <b>Litharge</b> —                        |                          |                     |
| Rotterdam,                               | 32 cks.                  |                     |
| <b>Mineral White</b> —                   |                          |                     |
| Bordeaux,                                | 100 bgs.                 | J. & P. Hutchison   |
| <b>Nickel Sulphate</b> —                 |                          |                     |
| Hamburg,                                 | 1 cs.                    |                     |
| <b>Nitrate</b> —                         |                          |                     |
| Rotterdam,                               | 7 cks.                   |                     |
| <b>Ochre</b> —                           |                          |                     |
| Treport,                                 | 78 cks.                  |                     |
| <b>Oxalic Acid</b> —                     |                          |                     |
| Rotterdam,                               | 14 cks.                  |                     |
| <b>Pitch</b> —                           |                          |                     |
| Hamburg,                                 | 80 brls.                 |                     |
| Rotterdam,                               | 5 cks.                   |                     |

|                             |                         |                          |
|-----------------------------|-------------------------|--------------------------|
| <b>Potash</b> —             |                         |                          |
| Treport,                    | 17 cks.                 |                          |
| Antwerp,                    | 200 bgs.                |                          |
| <b>Potassium Chloride</b> — |                         |                          |
| Hamburg,                    | 60 cks.                 |                          |
| <b>Potassium Sulphate</b> — |                         |                          |
| Rotterdam,                  | 200 cks.                |                          |
| <b>Saltpetre</b> —          |                         |                          |
| Hamburg,                    | 1 brl.                  |                          |
| Rotterdam,                  | 12 cks.                 |                          |
| <b>Sodium Bisulphite</b> —  |                         |                          |
| Hamburg,                    | 2 cs.                   |                          |
| <b>Sodium Nitrate</b> —     |                         |                          |
| Hamburg,                    | 3 cks.                  |                          |
| <b>Starch</b> —             |                         |                          |
| Hamburg,                    | 482 cs.                 |                          |
| Rotterdam,                  | 415                     | 44 bxs.                  |
| Ghent,                      | 20                      | J. T. Fletcher & Co.     |
| "                           | 10                      |                          |
| Antwerp,                    | 256                     | 130 bxs.                 |
| <b>Sulphur</b> —            |                         |                          |
| Hamburg,                    | 8 cks.                  |                          |
| <b>Tallow</b> —             |                         |                          |
| Hamburg,                    | 73 tcs.                 |                          |
| <b>Tartar</b> —             |                         |                          |
| Bordeaux,                   | 1 ck. J. & P. Hutchison |                          |
| <b>Tartaric Acid</b> —      |                         |                          |
| Antwerp,                    | 2 brls.                 |                          |
| Rotterdam,                  | 34 cks.                 |                          |
| <b>Ultramarine</b> —        |                         |                          |
| Hamburg,                    | 4 cks.                  |                          |
| <b>Waste Salt</b> —         |                         |                          |
| Hamburg,                    | 400 bgs.                | qty.                     |
| <b>White Lead</b> —         |                         |                          |
| Rotterdam,                  | 6 cks.                  |                          |
| <b>Wood Pulp</b> —          |                         |                          |
| Holmstad,                   | 2,683 bls.              | M'chester Ship Canal Co. |
| Drammen,                    | 400                     | W. H. Ingram             |
| Norrköping,                 | 1,660                   | Stott, Coker, & Co.      |
| Gefle,                      | 3,057                   | "                        |
| Gothenburg,                 | 2,067                   | "                        |
| Christiania,                | 1,908                   | "                        |
| Fredrikshald,               | 1,250                   | "                        |
| Skein,                      | 3,154                   | "                        |
| Gefle,                      | 4,592                   | "                        |
| Skutskar,                   | 2,177                   | "                        |
| <b>Wood Spirit</b> —        |                         |                          |
| Hamburg,                    | 4 dms.                  |                          |
| <b>Zinc Ashes</b> —         |                         |                          |
| Hamburg,                    | 21 cks.                 |                          |
| <b>Zinc Oxide</b> —         |                         |                          |
| Antwerp,                    | 30 brls.                |                          |
| <b>Zinc White</b> —         |                         |                          |
| Rotterdam,                  | 10 cks.                 |                          |

## HULL.

Week ending December 28th.

|                                          |              |                           |
|------------------------------------------|--------------|---------------------------|
| <b>Acetic Acid</b> —                     |              |                           |
| Rotterdam,                               | 34 blns.     | Hutchinson & Son          |
| <b>Acid</b> —                            |              |                           |
| Leghorn,                                 | 42 cks.      | Wilson, Sons, & Co., Ltd. |
| <b>Albumen</b> —                         |              |                           |
| Libau,                                   | 10 cs.       |                           |
| <b>Asbestos</b> —                        |              |                           |
| Reval,                                   | 12 bgs.      |                           |
| <b>Barytes</b> —                         |              |                           |
| Rotterdam,                               | 61 cks.      | Hutchinson & Son          |
| Antwerp,                                 | 34           | 25 bgs. Bailey & Leatham  |
| <b>Castor Oil</b> —                      |              |                           |
| Antwerp,                                 | 28 cks.      | Bailey & Leatham          |
| Leghorn,                                 | 18 cs.       | Wilson, Sons, & Co., Ltd. |
| <b>Litharge</b> —                        |              |                           |
| Genoa,                                   | 115          | "                         |
| "                                        | 10           | "                         |
| Marseilles,                              | 12           | "                         |
| <b>Chemicals (otherwise undescribed)</b> |              |                           |
| Copenhagen,                              | 1 ck.        | Wilson, Sons, & Co., Ltd. |
| Bremen,                                  | 4 cs.        | Veltmann & Co.            |
| Dunkirk,                                 | 8 dms.       | Wilson, Sons, & Co., Ltd. |
| Antwerp,                                 | 26 cks.      | "                         |
| <b>Cod Oil</b> —                         |              |                           |
| Hamburg,                                 | 30 brls.     | Wilson, Sons, & Co., Ltd. |
| <b>Colours</b> —                         |              |                           |
| Rotterdam,                               | 5 pks. 5 cs. | Hutchinson & Son          |
| "                                        | 102          | W. & C. L. Kingdon        |



|                      |                          |                          |
|----------------------|--------------------------|--------------------------|
| Antwerp,             | 5                        | Wilson Sons, & Co., Ltd. |
| Ghent,               | 5 cks.                   | "                        |
| Rotterdam,           | 24                       | "                        |
| Marseilles,          | 18                       | "                        |
| Riga,                | 274                      | "                        |
| <b>Dyestuffs—</b>    |                          |                          |
| <b>Alizarine</b>     |                          |                          |
| Rotterdam,           | 96 cks. 50 pks. 12 brls. | W. & C. L. Ringrose      |
| Amsterdam,           | 20                       | "                        |
| <b>Argols</b>        |                          |                          |
| Marseilles,          | 44 bgs.                  | Wilson Sons, & Co., Ltd. |
| <b>Fustic</b>        |                          |                          |
| Bremen,              | 6 t.                     | Veltmann & Co.           |
| <b>Logwood</b>       |                          |                          |
| Hamburg,             | 200 bgs.                 | Wilson Sons, & Co., Ltd. |
| <b>Farina—</b>       |                          |                          |
| Stettin,             | 308 bgs.                 | Wilson Sons, & Co., Ltd. |
| "                    | 250                      | "                        |
| Antwerp,             | 3                        | Bailey & Leatham         |
| Ghent,               | 174 cs.                  | Wilson Sons, & Co., Ltd. |
| <b>Glucose—</b>      |                          |                          |
| Stettin,             | 10 cks.                  | Wilson Sons, & Co., Ltd. |
| "                    | 8                        | 1,000 bgs.               |
| New York,            | 200 brls.                | 500                      |
| <b>Glue—</b>         |                          |                          |
| Stettin,             | 8 bkts.                  | Wilson Sons, & Co., Ltd. |
| Hamburg,             | 100 bls.                 | Bailey & Leatham         |
| "                    | 100 bgs.                 | Wilson Sons, & Co., Ltd. |
| <b>Lead Acetate—</b> |                          |                          |
| Hamburg,             | 30 cks.                  | Blundell, Spence, & Co.  |
| <b>Lead Oxide—</b>   |                          |                          |
| Amsterdam,           | 5 cks.                   | Hutchinson & Son         |
| <b>Lime—</b>         |                          |                          |
| New York,            | 299 bgs.                 | Wilson Sons, & Co., Ltd. |
| <b>Limestone—</b>    |                          |                          |
| Antwerp,             | 4 crts.                  | Wilson Sons, & Co., Ltd. |
| <b>Naphtha—</b>      |                          |                          |
| Riga,                | 1 ck.                    | Helmsing & Son           |
| <b>Ochre—</b>        |                          |                          |
| Marseilles,          | 54 cks.                  | Wilson Sons, & Co., Ltd. |
| <b>Pitch—</b>        |                          |                          |
| Antwerp,             | 22 cks.                  | J. M. Hamilton & Co.     |
| Amsterdam,           | 13                       | Hutchinson & Son         |
| <b>Pumice Stone—</b> |                          |                          |
| Leghorn,             | 6 cs.                    | Wilson Sons, & Co., Ltd. |
| "                    | 5 cks.                   | "                        |
| <b>Saltpetre—</b>    |                          |                          |
| Hamburg,             | 5 cks.                   | Lofthouse & Saltmer      |
| "                    | 10 kgs.                  | Wilson Sons, & Co., Ltd. |
| <b>Soap—</b>         |                          |                          |
| Naples,              | 8 cs.                    | Wilson Sons, & Co., Ltd. |
| Marseilles,          | 5                        | "                        |
| <b>Starch—</b>       |                          |                          |
| Amsterdam,           | 10 cs.                   | Hutchinson & Son         |

|                       |           |                          |
|-----------------------|-----------|--------------------------|
| Bremen,               | 1,272     | Veltmann & Co.           |
| <b>Stearine—</b>      |           |                          |
| New York,             | 35 trcs.  | Wilson Sons, & Co., Ltd. |
| Antwerp,              | 51 bgs.   | "                        |
| <b>Talc—</b>          |           |                          |
| Genoa,                | 15 bls.   | Wilson Sons, & Co., Ltd. |
| <b>Tartar—</b>        |           |                          |
| Bordeaux,             | 5 cks.    | Rawson & Robinson        |
| Naples,               | 26        | Wilson Sons, & Co., Ltd. |
| <b>Tartaric Acid—</b> |           |                          |
| Rotterdam,            | 8 cks.    | W. & C. L. Ringrose      |
| <b>Treacle—</b>       |           |                          |
| New York,             | 675 brls. | Wilson Sons, & Co., Ltd. |
| <b>Turpentine—</b>    |           |                          |
| Libau,                | 53 cks.   | "                        |
| <b>Ultramarine—</b>   |           |                          |
| Rotterdam,            | 11 cks.   | W. & C. L. Ringrose      |
| <b>Varnish—</b>       |           |                          |
| Copenhagen,           | 3 cs.     | Bailey & Leatham         |
| <b>Waste Salt—</b>    |           |                          |
| Hamburg,              | 103 bgs.  | "                        |
| <b>White Lead—</b>    |           |                          |
| Rotterdam,            | 10 cks.   | Hutchinson & Son         |
| Antwerp,              | 57        | Bailey & Leatham         |
| Amsterdam,            | 51        | Hutchinson & Son         |
| <b>Wood Pulp—</b>     |           |                          |
| Hango,                | 62 bls.   | Furley & Co.             |
| "                     | 63        | Bailey & Leatham         |
| "                     | 314       | "                        |
| <b>Zinc White—</b>    |           |                          |
| Rotterdam,            | 10 cks.   | W. & C. L. Ringrose      |
| Amsterdam,            | 25        | "                        |

## GLASGOW.

Week ending January 2nd.

|                         |                           |                  |
|-------------------------|---------------------------|------------------|
| <b>Alum—</b>            |                           |                  |
| Rotterdam,              | 228 bgs.                  | J. Rankine & Son |
| Hamburg,                | 65 cks.                   | "                |
| <b>Barium Chloride—</b> |                           |                  |
| Rotterdam,              | 4 cks.                    | J. Rankine & Son |
| <b>Barytes—</b>         |                           |                  |
| Rotterdam,              | 18 cks.                   | J. Rankine & Son |
| <b>Bone Meal—</b>       |                           |                  |
| Bombay,                 | 1,000 bgs.                | "                |
| <b>Castor Oil—</b>      |                           |                  |
| Marseilles,             | 539 brls. 27 cs.          | "                |
| <b>Colours—</b>         |                           |                  |
| Rotterdam,              | 1 cs. 1 ck. 1 bx. 2 brls. | J. Rankine & Son |
| Hamburg,                | 10                        | "                |
| <b>Dyestuffs—</b>       |                           |                  |
| <b>Alizarine</b>        |                           |                  |
| Rotterdam,              | 14 cks.                   | J. Rankine & Son |
| <b>Cutch</b>            |                           |                  |
| Rangoon,                | 690 bxs.                  | "                |
| <b>Extracts</b>         |                           |                  |
| Marseilles,             | 25 brls.                  | "                |

|                        |                   |                         |
|------------------------|-------------------|-------------------------|
| New York,              | 1                 |                         |
| Rouen,                 | 10 cks.           |                         |
| <b>Farina—</b>         |                   |                         |
| Hamburg,               | 200 bgs.          |                         |
| <b>Glue—</b>           |                   |                         |
| Rouen,                 | 9 cks.            |                         |
| New York,              | 8 brls.           |                         |
| <b>Ochre—</b>          |                   |                         |
| Rouen,                 | 51 cks.           |                         |
| Marseilles,            | 251               |                         |
| <b>Pitch—</b>          |                   |                         |
| Hamburg,               | 8 cs.             |                         |
| <b>Plumbago—</b>       |                   |                         |
| Colombo,               | 60 brls.          |                         |
| <b>Potash—</b>         |                   |                         |
| Rotterdam,             | 102 cks.          | J. Rankine & Son        |
| <b>Saltpetre—</b>      |                   |                         |
| Calcutta,              | 1 bx.             |                         |
| <b>Sodium Nitrate—</b> |                   |                         |
| Rotterdam,             | 4 cks.            | J. Rankine & Son        |
| <b>Starch—</b>         |                   |                         |
| New York,              | 125 sks.          |                         |
| <b>Tallow—</b>         |                   |                         |
| Rouen,                 | 12 cks.           |                         |
| <b>Tartaric Acid—</b>  |                   |                         |
| Marseilles,            | 4 brls.           |                         |
| <b>Treacle—</b>        |                   |                         |
| Charente,              | 2 cks.            |                         |
| <b>Varnish—</b>        |                   |                         |
| Rouen,                 | 11 cks.           |                         |
| New York,              | 10 brls. 1 bx.    |                         |
| <b>Waste Salt—</b>     |                   |                         |
| Hamburg,               | 508 bgs. 604 cks. |                         |
| <b>Wood Pulp—</b>      |                   |                         |
| Gefle,                 | 3,056 bls.        | Henderson, Craig, & Co. |
| <b>Zinc Oxide—</b>     |                   |                         |
| New York,              | 10 brls.          |                         |

## TYNE.

Week ending December 28th.

|                     |          |                       |
|---------------------|----------|-----------------------|
| <b>Alizarine—</b>   |          |                       |
| Rotterdam,          | 3 brls.  | Tyne S. S. Co.        |
| <b>Barytes—</b>     |          |                       |
| Rotterdam,          | 381 bgs. | Tyne S. S. Co.        |
| <b>Colours—</b>     |          |                       |
| Rotterdam,          | 1 ck.    | Tyne S. S. Co.        |
| <b>Glue—</b>        |          |                       |
| Antwerp,            | 2 cks.   | Tyne S. S. Co.        |
| <b>Limestone—</b>   |          |                       |
| Antwerp,            | 9 crts.  | Tyne S. S. Co.        |
| <b>Pyrites—</b>     |          |                       |
| Huelva,             | 2,002 t. | Scott Bros.           |
| <b>Salt—</b>        |          |                       |
| Hamburg,            | 84 bgs.  | Tyne S. S. Co.        |
| <b>Saltpetre—</b>   |          |                       |
| Hamburg,            | 20 cks.  | Tyne S. S. Co.        |
| <b>Ultramarine—</b> |          |                       |
| Hamburg,            | 4 cks.   | Tyne S. S. Co.        |
| <b>Wood Pulp—</b>   |          |                       |
| Christiania,        | 840 bls. |                       |
| Gothenburg,         | 120      | Furness, Withy, & Co. |
| "                   | 82 pks.  | "                     |

## GOOLE.

Week ending December 25th.

|                                          |              |        |
|------------------------------------------|--------------|--------|
| <b>Alkali—</b>                           |              |        |
| Calais,                                  | 12 cks.      |        |
| <b>Aniline—</b>                          |              |        |
| Ghent,                                   | 17 kgs.      | 3 cs.  |
| Hamburg,                                 |              | 2      |
| <b>Antimony—</b>                         |              |        |
| Boulogne,                                | 4 cs.        |        |
| <b>Caoutchouc—</b>                       |              |        |
| Boulogne,                                | 8 cs.        |        |
| <b>Colours—</b>                          |              |        |
| Hamburg,                                 | 3 cks.       |        |
| <b>Dyestuffs—</b>                        |              |        |
| <b>Alizarine</b>                         |              |        |
| Rotterdam,                               | 93 brls.     |        |
| <b>Logwood</b>                           |              |        |
| Jamaica,                                 | 387 t.       |        |
| <b>Dyestuffs (otherwise undescribed)</b> |              |        |
| Rotterdam,                               | 225 cks.     | 63 cs. |
| Boulogne,                                | 6 pkgs.      | 19     |
| <b>Farina—</b>                           |              |        |
| Hamburg,                                 | 650 bgs.     |        |
| Delfsryhl,                               | 1,995        |        |
| <b>Glucose—</b>                          |              |        |
| Hamburg,                                 | 7 cks.       |        |
| Calais,                                  | 200 bgs.     |        |
| <b>Glue—</b>                             |              |        |
| Rotterdam,                               | 60 bgs.      |        |
| <b>Phosphate—</b>                        |              |        |
| Ghent,                                   | 800 bgs.     |        |
| <b>Potash—</b>                           |              |        |
| Calais,                                  | 22 dms.      |        |
| Rotterdam,                               | 20           |        |
| Antwerp,                                 | 4 cks.       |        |
| <b>Pyrites—</b>                          |              |        |
| Norway,                                  | 900 t.       |        |
| <b>Saltpetre—</b>                        |              |        |
| Hamburg,                                 | 50 cks.      |        |
| Rotterdam,                               | 210 bgs.     |        |
| Antwerp,                                 | 80           |        |
| <b>Sulphur Ore—</b>                      |              |        |
| Seville,                                 | 965 t.       |        |
| <b>Ultramarine—</b>                      |              |        |
| Hamburg,                                 | 6 cks. 5 cs. |        |
| <b>Waste Salt—</b>                       |              |        |
| Hamburg,                                 | 554 cks.     |        |
| <b>Wood Pulp—</b>                        |              |        |
| Hamburg,                                 | 800 bdls.    |        |
| Rotterdam,                               | 400 bls.     |        |

## GRIMSBY.

Week ending December 28th.

|                                          |                 |  |
|------------------------------------------|-----------------|--|
| <b>Albumen—</b>                          |                 |  |
| Hamburg,                                 | 3 pkgs.         |  |
| <b>Caoutchouc—</b>                       |                 |  |
| Hamburg,                                 | 23 bgs.         |  |
| Rotterdam,                               | 5 pkgs.         |  |
| <b>Chemicals (otherwise undescribed)</b> |                 |  |
| Antwerp,                                 | 20 cs.          |  |
| Hamburg,                                 | 8 cks.          |  |
| <b>Colours—</b>                          |                 |  |
| Hamburg,                                 | 1 cs. 118 pkgs. |  |
| Rotterdam,                               | 5 cks.          |  |
| Antwerp,                                 | 19              |  |
| <b>Starch—</b>                           |                 |  |
| Antwerp,                                 | 10 cs.          |  |

EXPORTS OF CHEMICAL PRODUCTS  
OF  
THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

|                                 |                |     |
|---------------------------------|----------------|-----|
| <b>LONDON.</b>                  |                |     |
| <i>Week ending January 1st.</i> |                |     |
| <b>Acids—</b>                   |                |     |
| Natal,                          | 20 cs.         | £37 |
| Dunedin,                        | 2 t.           | £13 |
| <b>Alkali—</b>                  |                |     |
| E. London,                      | 7 t. 2 c.      | £57 |
| <b>Ammonia—</b>                 |                |     |
| Brisbane,                       | 30 cs. 12 dms. | £45 |
| Sydney,                         | 8 cks.         | 53  |
| <b>Ammonium Carbonate—</b>      |                |     |
| Dunkirk,                        | 1 t. 5 c.      | £41 |
| Boston,                         | 1 t. 7         | 60  |
| Sydney,                         | 15 cs.         | 28  |
| New York,                       | 29 10          | 890 |

|                              |             |       |
|------------------------------|-------------|-------|
| Santos,                      | 11          | 19    |
| Hioço,                       | 2 10        | 80    |
| Cologne,                     | 13 3        | 435   |
| <b>Ammonium Chloride—</b>    |             |       |
| Cape Town,                   | 2 t. 19 c.  | £100  |
| Ghent,                       | 3 cks.      | 23    |
| <b>Ammonium Sulphate—</b>    |             |       |
| Cape Town,                   | 43 t. 14 c. | £225  |
| Philadelphia,                | 50          | 480   |
| Bremen,                      | 50          | 450   |
| Ghent,                       | 250         | 2,250 |
| <b>Amorphous Phosphorus—</b> |             |       |
| E. London,                   | 1 cs.       | £13   |
| <b>Anhydrous Ammonia—</b>    |             |       |
| Cape Town,                   | 2 cs.       | £26   |

|                            |                 |     |
|----------------------------|-----------------|-----|
| <b>Arsenic—</b>            |                 |     |
| Mossel Bay,                | 10 c.           | £11 |
| Boston,                    | 21 t.           | 300 |
| <b>Barium Chlorate—</b>    |                 |     |
| Rotterdam,                 | 6 c.            | £26 |
| <b>Barium Nitrate—</b>     |                 |     |
| Bombay,                    | 12 c.           |     |
| <b>Bisulphite of Lime—</b> |                 |     |
| Melbourne,                 | 49 pks.         | £2  |
| <b>Bleaching Powder—</b>   |                 |     |
| Cape Town,                 | 11 c.           | £5  |
| Algoa Bay,                 | 3 t. 7          | 38  |
| <b>Borax—</b>              |                 |     |
| Sydney,                    | 10 kgs. 14 cks. | £35 |
| Rotterdam,                 | 5 t. 9 c.       | 228 |
| E. London,                 | 2 10            | 100 |

|                                          |           |     |
|------------------------------------------|-----------|-----|
| <b>Camphor—</b>                          |           |     |
| Cape Town,                               | 2 cs.     | £18 |
| <b>Caustic Soda—</b>                     |           |     |
| Melbourne,                               | 16 c.     | £17 |
| Newcastle,                               | 30 t.     | 189 |
| Cape Town,                               | 5         | 5   |
| Dunedin,                                 | 15 2      | 140 |
| New York,                                | 21 7      | 39  |
| Freemantle,                              | 10 13     | 77  |
| Algoa Bay,                               | 2 3       | 52  |
| E. London,                               | 1 1       | 25  |
| Philadelphia,                            | 116 t.    | 850 |
| <b>Chemicals (otherwise undescribed)</b> |           |     |
| B. Ayres,                                | 2 t. 9 c. | £45 |
| Brisbane,                                | 25 cs.    | 45  |
| E. London,                               | 2 10      | 105 |



|                                         |                                     |                                |                              |
|-----------------------------------------|-------------------------------------|--------------------------------|------------------------------|
| Cape Town, 13 cks. 5 14                 | Nitric Acid—                        | Volo, 10 18                    | Hio, 250                     |
| Algoa Bay, 12 32                        | Jersey, 15 carboys 635              | Varna, 10 18                   | London, Ont., 35             |
| Melbourne, 11 142                       | Oxalic Acid—                        | Genoa, 4 10 96                 | Malaga, 94                   |
| Paris, 127                              | Yokohama, 5 cks. 617                | Beyrout, 4 4 44                | Malta, 50                    |
| Bombay, 10 kgs. 37 150                  | Harlingen, 3 t. 100                 | Rotterdam, 5 5 3 75            | Manila, 300                  |
| Gibraltar, 2 t. 15 11                   | Phosphorus—                         | Trieste, 5 5 11                | Matanzas, 125                |
| <b>Citric Acid—</b>                     | Santa Cruz de Tenerife, 2 cs. 622   | <b>Ammonium Sulphate—</b>      | Messina, 35                  |
| Rotterdam, 5 kgs. 635                   | <b>Potash—</b>                      | Cullera, 101 t. 9 c. 3 q. 6920 | M. Video, 100                |
| Dunedin, 2 c. 16                        | Natal, 5 c. 612                     | San Francisco, 104 1 3 956     | N. Orleans, 35               |
| Sydney, 10 63                           | <b>Potassium Chlorate—</b>          | New York, 50 1 3 469           | Newport News, 614 190        |
| Philadelphia, 1 t. 10 205               | Bombay, 3 t. 4 c. 6127              | Philadelphia, 5 48             | New York, 518                |
| Toronto, 11 64                          | <b>Potassium Cyanide—</b>           | Valencia, 156 5 1 1,380        | Odessa, 80                   |
| Hio, 10 63                              | Pt. Elizabeth, 6 t. 1,653           | Las Palmas, 78 12 3 707        | Oporto, 45                   |
| <b>Coal Products—</b>                   | Delagoa Bay, 100 cks. 1,664         | Venice, 10 9 2 95              | Pacasmayo, 110               |
| <b>Alizarine</b>                        | <b>Potassium Prussiate—</b>         | Bordeaux, 9 16 3 90            | Port Credit, 35              |
| Bordeaux, 10 pks. 6250                  | Antwerp, 5 cks. 641                 | Honolulu, 614 5 1 5,527        | Portland, M., 200            |
| Bombay, 100 cks. 241                    | New York, 10 t. 712                 | Carthage (Sp.), 10 4 2 90      | Puerto Cabello, 18           |
| Boston, 10 128                          | <b>Saltpetre—</b>                   | Genoa, 28 4 3 252              | Riga, 104                    |
| <b>Aniline Dyes</b>                     | Libau, 3 t. 2 c. 678                | <b>Antimony—</b>               | Rio de Janeiro, 100          |
| Melbourne, 4 cs. 660                    | Dunedin, 1 5 6                      | Bilbao, 2 cks. 10 cks.         | Rotterdam, 58                |
| <b>Aniline Oil</b>                      | Sydney, 1 5 6                       | Bombay, 2 10 cks.              | St. John, N.B., 100 50 pkgs. |
| New York, 10 drs. 580                   | Bahia, 4 11 109                     | Iquique, 1 cs. 1 cs.           | San Francisco, 300           |
| <b>Aniline Salts</b>                    | Santos, 1 1 27                      | <b>Arsenic—</b>                | Santa Catharina, 25 40 bxs.  |
| New York, 63 cks. 6500                  | Brisbane, 1 1 23                    | Portland, 9 t. 10 c. 1 q. 6157 | Santos, 15                   |
| <b>Anthracene</b>                       | Rio de Janeiro, 7 12 180            | <b>Asbestos—</b>               | Singapore, 14                |
| Dusseldorf, 318 cks. 62,910             | Auckland, 10 11                     | Alexandria, 4 pkgs.            | Sydney, 60                   |
| <b>Benzol</b>                           | <b>Sheep Dip—</b>                   | Iquique, 4 bls.                | Tampico, 60                  |
| New York, 30 drs. 6237                  | Dunedin, 20 cks. 100 dms. 6244      | Bombay, 2 cs.                  | Wellington, 184 10           |
| Rotterdam, 12 68 pks. 318               | Cape Town, 4 t. 80                  | <b>Bisulphite of Lime—</b>     |                              |
| Hamburg, 159 cks. 539                   | B. Ayres, 148 11 c. 5,806           | Rangeon, 8 t. 655              |                              |
| <b>Carbolic Acid</b>                    | New York, 5 14 50                   | <b>Bleaching Powder—</b>       |                              |
| Demerara, 1 cs. 613                     | Pt. Elizabeth, 4 9 188              | Alicante, 29 cks.              |                              |
| Cape Town, 16 64                        | Napier, 100 dms. 75 kgs. 75 cs. 363 | Baltimore, 270                 |                              |
| Hio, 10 cks. 26                         | <b>Slag—</b>                        | Barcelona, 6                   |                              |
| Singapore, 53 pks. 34                   | Cape Town, 342 t. 17 c. 6870        | Bari, 2 5 brls. 10 kgs. 8 cs.  |                              |
| Rotterdam, 227 922                      | <b>Soda Alkali—</b>                 | Bombay, 1,009 6                |                              |
| Yokohama, 100 257                       | Algoa Bay, 15 c. 616                | B. Ayres, 7 125                |                              |
| Hamburg, 40 20                          | Cape Town, 8 5                      | Calcutta, 30                   |                              |
| Paris, 10 10                            | <b>Soda Ash—</b>                    | Genoa, 30                      |                              |
| Algoa Bay, 7 10                         | Amsterdam, 4 t. 14 c. 638           | Havana, 2                      |                              |
| <b>Coal Tar Dyes</b>                    | <b>Soda Crystals—</b>               | Leghorn, 30                    |                              |
| Boston, 4 cks. 639                      | Boston, 2 t. 16 c. 650              | Lisbon, 3                      |                              |
| <b>Creosote</b>                         | <b>Sodium Acetate—</b>              | Naples, 20                     |                              |
| New York, 6 cs. 1,500 brls. 6745        | Melbourne, 1 t. 1 c. 616            | New York, 389                  |                              |
| Rotterdam, 25 brls. 6100                | Brisbane, 2 4 32                    | Philadelphia, 60 25            |                              |
| <b>Naphtha</b>                          | <b>Sodium Bicarbonate—</b>          | Portland, M., 15               |                              |
| Brussels, 10 cks. 629                   | Barbadoes, 1 t. 5 c. 67             | Stettin, 20                    |                              |
| <b>Naphthalene</b>                      | Sydney, 6 19 57                     | Valparaiso, 60                 |                              |
| Hamburg, 2,026 bgs. 6400                | <b>Strontium Nitrate—</b>           | Vera Cruz, 16 10               |                              |
| Treport, 100 bgs. 88 cks. 6730          | Bombay, 1 t. 5 c. 624               | <b>Boracic Acid—</b>           |                              |
| <b>Paraffin Wax</b>                     | Boston, 1 1 624                     | Rotterdam, 5 t. 2 c. 6155      |                              |
| Dunedin, 10 cs. 635                     | <b>Sulphur—</b>                     | Antwerp, 19 19                 |                              |
| <b>Pitch</b>                            | Pt. Elizabeth, 18 c. 66             | <b>Borax—</b>                  |                              |
| Boston, 350 brls. 6177                  | Cape Town, 100 cks. 50 kgs. 115     | Syria, 10 c. 1 q. 610          |                              |
| Antwerp, 300 t. 555                     | E. London, 75 50 80                 | Tampico, 15 15                 |                              |
| Dunkirk, 185 394                        | <b>Sulphuric Acid—</b>              | Toronto, 6 t. 3 66             |                              |
| Alexandria, 300 111                     | Natal, 25 cs. 619                   | Montreal, 10 3 2 109           |                              |
| <b>Tar</b>                              | Cape Town, 4 t. 8 c. 621            | Rotterdam, 23 17 485           |                              |
| Boston, 350 brls. 6180                  | <b>Tartaric Acid—</b>               | Hamburg, 19 19                 |                              |
| Trinidad, 10 10                         | Brisbane, 80 cs. 650                | Antwerp, 7 7                   |                              |
| Malta, 10 10                            | Sydney, 1 t. 10 c. 173              | <b>Calcium—</b>                |                              |
| Adelaide, 10 18                         | Dunedin, 2 12 12                    | Adelaide, 10 t. 8 c. 623       |                              |
| Danzig, 249 125                         | Algoa Bay, 4 27 67                  | <b>Calcium Chloride—</b>       |                              |
| Algoa Bay, 550 57                       | Auckland, 6 32                      | Fiume, 3 t. 4 c. 67            |                              |
| <b>Tar Oil</b>                          |                                     | Melbourne, 1 3 2               |                              |
| Hamburg, 200 brls. 6115                 |                                     | <b>Camphor—</b>                |                              |
| <b>Coal Products (otherwise under.)</b> |                                     | Iquitos, 1 cs.                 |                              |
| Singapore, 15 drs. 614                  |                                     | <b>Carbolic Acid—</b>          |                              |
| Ghent, 1 10                             |                                     | Cape Town, 1 t. 2 c. 3 q. 617  |                              |
| Algoa Bay, 400 35                       |                                     | Venice, 5 1 10                 |                              |
| <b>Copper Sulphate—</b>                 |                                     | New York, 3 15 219             |                              |
| Bahia, 1 t. 4 c. 620                    |                                     | Bombay, 1 14 14                |                              |
| Seville, 2 40                           |                                     | Rotterdam, 15 15 776           |                              |
| <b>Copperas—</b>                        |                                     | Hamburg, 1 2 57                |                              |
| Cologne, 8 c. 612                       |                                     | Newport News, 5 4 256          |                              |
| <b>Cream of Tartar—</b>                 |                                     | Genoa, 9 3 26                  |                              |
| Sydney, 5 c. 624                        |                                     | <b>Castor Oil—</b>             |                              |
| Dunedin, 2 t. 5 c. 200                  |                                     | Honolulu, 3 dms.               |                              |
| Wellington, 10 52                       |                                     | <b>Caustic Potash—</b>         |                              |
| Melbourne, 1 96                         |                                     | Newport News, 1 t. 12 c. 646   |                              |
| Auckland, 10 55                         |                                     | <b>Caustic Soda—</b>           |                              |
| <b>Disinfectants—</b>                   |                                     | Adelaide, 70 dms.              |                              |
| Brisbane, 4 cs. 612                     |                                     | Alexandria, 50                 |                              |
| Cape Town, 499 pks. 411                 |                                     | Alicante, 30                   |                              |
| Sydney, 10 cks. 54                      |                                     | Amsterdam, 334                 |                              |
| Natal, 54 53                            |                                     | Ancona, 40                     |                              |
| E. London, 200 drs. 33                  |                                     | Baltimore, 280 40 bxs.         |                              |
| Calcutta, 4 t. 12 c. 500 257            |                                     | Barcelona, 109 109             |                              |
| Antigua, 8 14                           |                                     | Bari, 156                      |                              |
| Barbadoes, 3 cks. 18                    |                                     | Bilbao, 60                     |                              |
| Gibraltar, 1 11                         |                                     | Bombay, 61                     |                              |
| Algoa Bay, 2 40                         |                                     | Bordeaux, 17                   |                              |
| <b>Guano—</b>                           |                                     | Brindisi, 5                    |                              |
| Ghent, 15 t. 2 c. 673                   |                                     | B. Ayres, 20                   |                              |
| <b>Magnesia—</b>                        |                                     | Cacres, 30                     |                              |
| Sydney, 5 cs. 614                       |                                     | Calcutta, 37                   |                              |
| <b>Manure—</b>                          |                                     | Cardenas, 15                   |                              |
| Limon, 7 t. 663                         |                                     | Dunedin, 6                     |                              |
| Orotava, 7 10 c. 59                     |                                     | Genoa, 172                     |                              |
| Penang, 207 1,828                       |                                     | Hamburg, 5                     |                              |
| Jersey, 184 14 1,114                    |                                     | Havana, 60                     |                              |

## LIVERPOOL.

Week ending January 1st.

|                                   |  |
|-----------------------------------|--|
| <b>Acetic Acid—</b>               |  |
| Brisbane, 3 cks. 627              |  |
| <b>Alkali—</b>                    |  |
| Santander, 10 t. 19 c. 2 q. 642   |  |
| <b>Alum—</b>                      |  |
| B. Ayres, 5 t. 13 c. 627          |  |
| Bourgas, 1 5 1 q. 6               |  |
| Piraeus, 1 15 9                   |  |
| Portland, M., 3 11 1 18           |  |
| Pernambuco, 8 3 4                 |  |
| Beyrout, 7 35                     |  |
| Syria, 3 10 5                     |  |
| Chalcis, 1 8                      |  |
| <b>Alumina Sulphate—</b>          |  |
| Portland, M., 9 t. 17 c. 1 q. 645 |  |
| <b>Aluminium—</b>                 |  |
| Santos, 8 cks. 69                 |  |
| <b>Aluminous Cake—</b>            |  |
| Santos, 2 t. 3 c. 69              |  |
| Melbourne, 4 1 q. 16              |  |
| Calcutta, 5 5 23                  |  |
| <b>Ammonium Carbonate—</b>        |  |
| Valparaiso, 2 t. 669              |  |
| <b>Ammonium Carbonate—</b>        |  |
| Valparaiso, 2 t. 669              |  |
| <b>Ammonium Chloride—</b>         |  |
| Syria, 4 c. 1 q. 68               |  |
| Calcutta, 1 t. 1 14               |  |
| Patras, 7 14                      |  |
| Kurrachee, 1 10 57                |  |

## Chemicals (otherwise underdescribed)

|                            |  |
|----------------------------|--|
| Genoa, 1 t. 637            |  |
| Trieste, 3 105             |  |
| Calcutta, 41 3 c. 1 q. 120 |  |
| Larnaca, 6 11              |  |
| Antwerp, 2 cs. 6 cks. 34   |  |
| Bombay, 15 t. 12 3 86      |  |
| Philadelphia, 13 430       |  |

## China Clay—

|                            |  |
|----------------------------|--|
| Bombay, 1,480 cks. 74 bgs. |  |
| Boston, 432 t.             |  |
| Calcutta, 25 4 c.          |  |
| Maranham, 3 6              |  |
| Philadelphia, 26           |  |
| Portland, M., 252          |  |
| Trinidad, 10               |  |

## Coal Products—

|                                     |  |
|-------------------------------------|--|
| <b>Alizarine</b>                    |  |
| Philadelphia, 5 cks.                |  |
| <b>Aniline Colours</b>              |  |
| Calcutta, 1 cs.                     |  |
| Philadelphia, 17 dms.               |  |
| <b>Aniline Oil</b>                  |  |
| Fiume, 10 dms.                      |  |
| <b>Aniline Salts</b>                |  |
| Boston, 39 cks. 40 cs.              |  |
| New York, 14                        |  |
| <b>Creosote Oil</b>                 |  |
| Honolulu, 75 cs.                    |  |
| Lisbon, 275 brls.                   |  |
| <b>Creosote Salts</b>               |  |
| Philadelphia, 330 bgs.              |  |
| <b>Pitch</b>                        |  |
| Marseilles, 70 cks. 1,013 t. 61,170 |  |
| <b>Sables</b>                       |  |
| Tar                                 |  |
| Barcelona, 4 cks.                   |  |
| Honolulu, 60 brls.                  |  |
| Iquique, 20 dms.                    |  |
| Philadelphia, 100                   |  |
| <b>Tar Oil</b>                      |  |
| Batavia, 4 cs.                      |  |

## Copperas—

|                       |  |
|-----------------------|--|
| Bourgas, 5 t. 3 c. 68 |  |
| Syria, 7 12           |  |

## Copper Sulphate—

|                          |  |
|--------------------------|--|
| Seville, 8 t. 15 c. 6136 |  |
| Paris, 11 4 2 q. 182     |  |
| Marseilles, 2 19 48      |  |
| Barcelona, 9 17 1 149    |  |
| Beyrout, 2 9 3 8         |  |
| Bari, 2 30               |  |
| Piraeus, 15 1 12         |  |
| Ancona, 5 1 75           |  |
| Bombay, 1 5 21           |  |
| Nantes, 10 160           |  |
| Palermo, 4 18 75         |  |
| Bordeaux, 346 13 5,454   |  |
| La Plata, 1 10 28        |  |
| Catania, 10 2 150        |  |
| Smyrna, 1 4 2 19         |  |
| Cette, 423 14 3 26       |  |

## Cream of Tartar—

|                          |  |
|--------------------------|--|
| Portland, 2 t. 6134      |  |
| Victoria, B.C., 15 c. 29 |  |

## Dextrine—

|                |  |
|----------------|--|
| Bombay, 1 brl. |  |
|----------------|--|

## Disinfectants—

|                       |  |
|-----------------------|--|
| Bombay, 3 t. 4 c. 615 |  |
|-----------------------|--|

## Farina—

|                         |  |
|-------------------------|--|
| Rio de Janeiro, 10 bgs. |  |
|-------------------------|--|



|                            |                 |                   |                              |                 |         |                       |                 |              |                             |                |                  |
|----------------------------|-----------------|-------------------|------------------------------|-----------------|---------|-----------------------|-----------------|--------------|-----------------------------|----------------|------------------|
| <b>Gelatine—</b>           |                 |                   | <b>Paraffin Wax—</b>         |                 |         | <b>Barbadoes,</b>     |                 |              | <b>Bombay,</b>              |                |                  |
| New York,                  | 2 cs.           |                   | Bar,                         | 20 bgs.         |         | 960                   |                 |              | 100                         |                |                  |
| <b>Glue—</b>               |                 |                   | Salonica,                    | 30 cs. 10 brls. |         | 25                    |                 |              | Boston,                     | 196 brls.      |                  |
| Corunna,                   | 10 bgs.         |                   | <b>Phosphorus—</b>           |                 |         | Bermuda,              | 15              |              | B. Ayres,                   | 134            | 100 bgs.         |
| New York,                  | 280             |                   | Trinidad,                    | 2 c.            | £20     | Bocas del Toro,       | 160             |              | Calcutta,                   | 6              | 35 cks.          |
| Pernambuco,                | 4 brls.         |                   | M. Video,                    | 4               | 44      | Bombay,               | 474             | 28           | Montreal,                   | 75             |                  |
| <b>Gypsum—</b>             |                 |                   | <b>Potash—</b>               |                 |         | Boston,               |                 | 2,000        | New York,                   | 112            | 140              |
| New York,                  | 36 t. 10 c.     | £117              | Rosario,                     | 4 c.            | £5      | B. Ayres,             | 30 bdl.         | 10           | Philadelphia,               |                | 49               |
| <b>Lime—</b>               |                 |                   | <b>Potassium Bichromate—</b> |                 |         | Calcutta,             | 50 bdl.         | 10           | St. John,                   | 100            |                  |
| Sierra Leone,              | 9 t. 4 c. 3 q.  | £15               | Pernambuco,                  | 6 c. 1 q.       | £13     | Cette,                | 40              |              | St. John's, N'd.            | 70             | 25               |
| <b>Magnesia—</b>           |                 |                   | Valparaiso,                  | 2               | 3       | Colombo,              | 6               |              | Trinidad,                   |                | 14               |
| Havre,                     | 3 t. 17 c.      | £136              | Piræus,                      | 7 t. 16         | 298     | Curacao,              | 203             |              | Valparaiso,                 | 8 pcls. 3 cs.  | 200              |
| Paris,                     | 90 cs.          |                   | <b>Potassium Carbonate—</b>  |                 |         | Durban,               | 50              |              | Varna,                      |                | 27               |
| Vera Cruz,                 | 4               |                   | Para,                        | 1 t. 8 c.       | £36     | E. London,            |                 | 15           | <b>Sodium Arseniate—</b>    |                |                  |
| <b>Magnesium—</b>          |                 |                   | New York,                    | 6 3             | 112     | Gibraltar,            | 125             |              | New York,                   | 3 cs.          |                  |
| Bombay,                    | 5 cks.          |                   | <b>Potassium Chlorate—</b>   |                 |         | Halifax,              | 200             |              | <b>Sodium Bicarbonate—</b>  |                |                  |
| <b>Magnesium Chloride—</b> |                 |                   | Copenhagen,                  | 2 t.            | £74     | Hong Kong,            | 1               | 25 kgs.      | Alexandria,                 | 165 kgs.       |                  |
| Genoa,                     | 10 dms.         |                   | Oporto,                      | 10 c.           | 24      | Honolulu,             | 450             | 50           | Algoa Bay,                  | 150            |                  |
| <b>Magnesium Sulphate—</b> |                 |                   | Naples,                      | 2               | 10 c.   | Kingston, Jam,        |                 | 2            | Amsterdam,                  | 28             |                  |
| Bombay,                    | 40 dbl.-bgs.    |                   | Newcastle, NSW,              | 1               | 1       | Kurrachee,            | 500             | 50           | Antwerp,                    | 110            |                  |
| Honolulu,                  | 20 cs.          |                   | Rotterdam,                   | 10              | 30      | Landana,              | 50              |              | Bari,                       | 78             |                  |
| Iquitos,                   | 5               |                   | Genoa,                       | 1               | 168     | Lanzarote,            | 56              |              | Bombay,                     | 185            |                  |
| <b>Manure—</b>             |                 |                   | Antwerp,                     | 4               | 10      | Las Palmas,           | 280             |              | B. Ayres,                   | 30             | 30 cks. 50 bgs.  |
| Bordeaux,                  | 250 t. 14 c.    | £710              | M. Video,                    | 10              | 29      | Malta,                |                 | 20           | Cairo,                      | 40 brls.       | 20               |
| Valencia,                  | 50 12           | 2 q. 125          | Ancona,                      | 10              | 59      | Manila,               |                 | 3            | Calcutta,                   | 1,000          |                  |
| <b>Mineral White—</b>      |                 |                   | Bar,                         | 1               | 44      | Matadi,               | 15              |              | Copenhagen,                 | 100            | 21               |
| Lisbon,                    | 30 bgs.         |                   | Hiogo,                       | 25              | 950     | New York,             | 385             | 3,031        | E. London,                  | 20             |                  |
| <b>Muriatic Acid—</b>      |                 |                   | New York,                    | 20 6            | 859     | Old Calabar,          | 400             |              | Genoa,                      | 140            | 54               |
| Pernambuco,                | 1 t. 5 c.       | £14               | <b>Potassium Prussiate—</b>  |                 |         | Patras,               |                 | 5            | Gibraltar,                  |                | 8                |
| <b>Ochre—</b>              |                 |                   | Genoa,                       | 18 c. 2 q.      | £69     | Piræus,               | 50              |              | Hamburg,                    | 56             |                  |
| E. London,                 | 100 brls.       |                   | <b>Potassium Sulphate—</b>   |                 |         | Pt. Elizabeth,        |                 | 170          | Hiogo,                      | 200            |                  |
| Kingston, Ja.,             | 10              |                   | Rio de Janeiro,              | 5 t.            | £39     | Portland, Me.,        |                 | 1            | Hong Kong,                  | 10             |                  |
| <b>Oxalic Acid—</b>        |                 |                   | <b>Salt—</b>                 |                 |         | Pt. Natal,            | 198             | 50           | Kurrachee,                  | 500            |                  |
| Boston,                    | 28 t. 6 c.      | £828              | Adelaide,                    | 100 t.          |         | Rangoon,              |                 | 1            | Leghorn,                    | 20             |                  |
| Valparaiso,                | 6 3 q.          | 12                | Amsterdam,                   | 100             |         | Rotterdam,            |                 | 1,420        | Montreal,                   | 55             | 10               |
| <b>Paint—</b>              |                 |                   | Antwerp,                     | 165             |         | St. John,             |                 | 400          | Naples,                     | 150            |                  |
| Alexandria,                | 40 kgs. 4 pkgs. |                   | Axim,                        | 4               |         | St. John's, N'd.      | 75              |              | New York,                   |                | 126              |
| Antofagasta,               | 5 cs.           |                   | Baltimore,                   | 800             |         | St. Nazaire,          | 180             |              | Paris,                      | 97             | 19               |
| Barranquilla,              | 150             |                   | Bombay,                      | 1               | 1 c.    | Salt Pond,            | 25              |              | Perth,                      | 40             |                  |
| Beyrout,                   | 12              |                   | Bordeaux,                    | 5               |         | San Fernando,         | 500             |              | Rotterdam,                  | 71             | 6                |
| Boca,                      | 9               |                   | Boston,                      | 300             |         | San Juan del          |                 | 100          | St. John,                   | 100            |                  |
| Boma,                      |                 |                   | B. Ayres,                    | 66              |         | Sur,                  |                 |              | St. John's, N.F.,           | 45             |                  |
| Calcutta,                  | 100             | 11 dms.           | Calcutta,                    | 3               | 4       | Savanilla,            |                 | 7            | Salonica,                   | 50             |                  |
| Callao,                    | 10 cks.         |                   | Cameroon,                    | 103             | 14      | Shanghai,             | 2,934           |              | Smyrna,                     | 20             |                  |
| Cape Haitien,              | 2               |                   | C. C. Castle,                | 25              |         | Singapore,            | 27              | 40           | Sourabaya,                  | 20             |                  |
| Cartagena, N.G.,           | 90              |                   | Cape Town,                   | 100             |         | Smyrna,               | 50              |              | Stettin,                    |                | 9                |
| Colombo,                   | 4               |                   | Charleston,                  | 2,000           |         | Surinam,              | 100             |              | Sydney,                     | 400            | 10 pkgs. 20 bgs. |
| Curacao,                   | 40              |                   | Christiania,                 | 73              | 13      | Syria,                | 100             |              | Teneriffe,                  |                |                  |
| Egwanga,                   | 5 brls. 21      |                   | Copenhagen,                  | 102             |         | Teneriffe,            | 200             |              | Trieste,                    | 50             |                  |
| Havana,                    | 12              |                   | Dunedin,                     | 80              |         | Trieste,              |                 | 1            | Valencia,                   | 50             |                  |
| Honolulu,                  | 35              |                   | Egwanga,                     | 20              |         | Trinidad,             | 2,000           |              | Valparaiso,                 | 20             | 17               |
| Kingston, Ja.,             | 2               |                   | Faroe Is.,                   | 145             |         | Valparaiso,           | 100             | 5            | Vancouver,                  |                | 3                |
| La Libertad,               | 20              |                   | Ghent,                       | 450             |         | Vera Cruz,            | 111             | 100          | Victoria, B. C.,            | 25             |                  |
| Manaos,                    | 6               |                   | Lagos,                       | 151             | 15      | Warri,                |                 |              | Wellington,                 | 2,780          |                  |
| Manila,                    | 16              | 1,000 kgs.        | Melbourne,                   | 27              |         | <b>Soda—</b>          |                 |              | <b>Sodium Bichromate—</b>   |                |                  |
| M. Video,                  | 10              |                   | N. Orleans,                  | 780             |         | Boston,               | 5 cks.          |              | Tampico,                    | 2 cks.         |                  |
| Montreal,                  | 2 cs.           |                   | Newport N.,                  | 1,168           | 15      | <b>Soda Alkali—</b>   |                 |              | <b>Sodium Carbonate—</b>    |                |                  |
| Old Calabar,               |                 |                   | New York,                    | 84              |         | Boston,               | 28 cks.         |              | Porto Alegre,               | 20 kgs.        |                  |
| Para,                      | 4               | 10 dms.           | Old Calabar,                 | 130             |         | Genoa,                | 350 brls.       |              | <b>Sodium Chlorate—</b>     |                |                  |
| Panama,                    | 21              | 5                 | Opobo,                       | 30              |         | Lisbon,               | 35              |              | Boston,                     | 225 kgs.       |                  |
| Port Natal,                | 4               |                   | Para,                        | 83              |         | Melbourne,            | 80              |              | Rotterdam,                  | 42             |                  |
| Rio de Janeiro,            | 4               | 12 dms.           | Pensacola,                   | 550             |         | Sydney,               | 17              |              | <b>Sodium Hyposulphite—</b> |                |                  |
| Rio Grande do              |                 |                   | Portland, M.,                | 583             |         | <b>Soda Ash—</b>      |                 |              | Savanilla,                  | 21 kgs.        |                  |
| Sul                        | 3 cs.           |                   | Port Maria,                  | 8               |         | Adelaide,             | 119 brls.       |              | <b>Sodium Oxide—</b>        |                |                  |
| Savanilla,                 | 2               |                   | Punta Arenas,                | 25              | 8       | Algoa Bay,            | 80 kgs. 16 cks. |              | Hong Kong,                  | 2 cs.          |                  |
| Sierra Leone,              | 104             |                   | Quitta,                      | 200             |         | Anwerp,               | 350 bgs.        |              | <b>Sodium Silicate—</b>     |                |                  |
| Valparaiso,                | 1 cs.           | 100 brls.         | Rio del Rey,                 | 15              |         | Baltimore,            | 5,252           | 371 245 tcs. | Acacutla,                   | 17 cks.        |                  |
| <b>Painters' Colours—</b>  |                 |                   | Rotterdam,                   | 200             |         | Barcelona,            |                 | 79           | Adelaide,                   | 30             |                  |
| Alexandria,                | 25 cks.         |                   | St. John, N.B.,              | 100             |         | Bombay,               |                 | 9            | Barcelona,                  | 32             |                  |
| Antwerp,                   | 7               |                   | St. John,                    | 50              |         | Boston,               | 2,220           | 204 145      | Bilbao,                     |                | 35 brls.         |
| Bahia,                     | 2               |                   | Salt Pond,                   | 1               | 5       | Brisbane,             | 125 cs.         |              | Bombay,                     | 5              |                  |
| Baltimore,                 | 161             |                   | San Francisco,               | 1,247           |         | B. Ayres,             | 111             |              | Havre,                      | 10             |                  |
| Bilbao,                    | 40              |                   | Shanghai,                    | 300             | 10      | Calcutta,             | 182             |              | Mauritius,                  | 5              |                  |
| Bombay,                    | 62 cs.          | 1,709 kgs 50 dms. | Sierra Leone,                | 300             |         | Canterbury,           | 4               |              | Piræus,                     | 148            |                  |
| Boston,                    | 1               | 3 17              | Talcahuano,                  | 21              | 10      | Cartagena, N.G.,      | 34              |              | Salonica,                   | 16             |                  |
| B. Ayres,                  | 15 brls. 0      | 30                | Trinidad,                    | 10              | 4       | Genoa,                | 160             |              | Sydney,                     | 20             |                  |
| Calcutta,                  | 4 cs. 14        |                   | Valparaiso,                  | 650             |         | Gothenburg,           | 200             | 55           | Tripoli,                    | 8              |                  |
| Cape Haitien,              |                 | 6 cs.             | Warri,                       | 4               |         | Hamburg,              |                 | 140 sks.     | Volo,                       | 10             |                  |
| Hamburg,                   |                 | 26 pkgs.          | Wellington,                  | 80              | 5       | Havana,               |                 |              | <b>Starch—</b>              |                |                  |
| Hong Kong,                 | 76              | 5 dms.            | <b>Salt Cake—</b>            |                 |         | Hiogo,                |                 | 136          | Patras,                     | 30 cs.         |                  |
| Honolulu,                  | 64              |                   | Wellington, N.Z.,            | 2 t. 4 c.       | £5      | M. Video,             |                 | 50 brls.     | <b>Sulphur—</b>             |                |                  |
| Iquique,                   | 4               | 50                | Antwerp,                     | 50              | 108     | Montreal,             | 400             |              | Philadelphia,               | 34 t. 1 c.     | £110             |
| Kingston, Ja.,             |                 | 12 brls.          | Baltimore,                   | 538             | 719     | New York,             | 1,254           | 37           | Boston,                     | 395            | 11 1,286         |
| La Libertad,               | 7 cs.           | 2                 | <b>Saltpetre—</b>            |                 |         | New York,             | 3,500           | 44 211 tcs.  | Para,                       |                | 5 2              |
| Leghorn,                   | 20              |                   | Para,                        | 8 c.            | £10     | Oporto,               |                 | 2            | Parahyba,                   | 1              | 6 14             |
| Lisbon,                    | 67              | 4                 | Perth (Austra.),             | 5               | 6       | Penang,               |                 | 32           | <b>Sulphuric Acid—</b>      |                |                  |
| Malta,                     | 12              |                   | Parahyba,                    | 3 t. 2          | 2 q. 89 | Philadelphia,         | 6,990           | 120 998      | Porto Alegre,               | 19 c. 2 q.     | £10              |
| M. Video,                  | 60 100          | 20                | <b>Sheep Dip—</b>            |                 |         | Piræus,               |                 | 20 brls.     | <b>Superphosphate—</b>      |                |                  |
| N. Orleans,                | 100             |                   | Calcutta,                    | 1 t. 13 c. 2 q. | £38     | Portland, Me.,        | 200             |              | Valencia,                   | 15 t.          | £26              |
| New York,                  | 5               | 300               | Punta Arenas,                | 7 19            | 289     | Puerto Cabello,       |                 | 4            | Teneriffe,                  | 15             | 33               |
| Pernambuco,                | 1               |                   | B. Ayres,                    | 194             | 3 5,001 | Rio de Janeiro,       | 100             | 200          | Lisbon,                     | 2              | 8                |
| Punta Arenas,              |                 | 5                 | M. Video,                    | 8 11            | 285     | Rio Grande do Sul,    | 140             |              | Honolulu,                   | 10             | 177              |
| Rio de Janeiro,            | 10              | 30 4 tcs.         | <b>Soap—</b>                 |                 |         | Rotterdam,            | 310 bgs. 20     |              | Bordeaux,                   | 19 13 c. 3 q.  | 35               |
| Salonica,                  |                 | 2 brls.           | Accra,                       | 50 bxs.         |         | Salonica,             |                 | 180          | <b>Tin Crystals—</b>        |                |                  |
| San Francisco,             | 167             |                   | Adelaide,                    |                 | 10 cs.  | San Francisco,        |                 | 260          | Bombay,                     | 14 c.          | £35              |
| Santa Caterina,            |                 | 87 cs.            | Algoa Bay,                   |                 | 230     | Smyrna,               | 350             | 100          | <b>Treacle—</b>             |                |                  |
| Santander,                 | 20              |                   | Ambriz,                      | 40              |         | Sourabaya,            |                 | 27           | Amsterdam,                  | 25 cks.        |                  |
| Santos,                    | 10              |                   | Amsterdam,                   |                 | 10      | Sydney,               |                 | 332          | Antwerp,                    | 5 140 hf.-pns. | 25 brls.         |
| Volo,                      |                 | 23 brls.          | Antwerp,                     |                 | 2,400   | Valparaiso,           |                 | 2            | Gothenburg,                 |                | 25 tcs. 30       |
| Warre,                     | 9               | 2 bxs.            | Arica,                       |                 | 1       | Wellington,           |                 | 400          | Havre,                      | 45             |                  |
|                            |                 |                   |                              |                 |         | Yokohama,             |                 | 100          | Rotterdam,                  | 20 cks.        |                  |
|                            |                 |                   |                              |                 |         | <b>Soda Crystals—</b> |                 |              | Terneuzen,                  |                | 6                |
|                            |                 |                   |                              |                 |         | Algoa Bay,            | 20 kgs.         |              | <b>Turpentine—</b>          |                |                  |
|                            |                 |                   |                              |                 |         |                       |                 |              | Cartagena, Sp.,             | 9 dms.         |                  |



|                       |            |      |
|-----------------------|------------|------|
| Hong Kong,            | 10         |      |
| Trieste,              | 30 brls.   |      |
| <b>Ultramarine—</b>   |            |      |
| New York,             | 3 brls.    |      |
| <b>Yarnish—</b>       |            |      |
| Boston,               | 12 pkgs.   |      |
| Cabinda,              | 30 brls.   |      |
| Callao,               | 2 cs.      |      |
| Colombo,              | 2          |      |
| Havana,               | 1          |      |
| Hong Kong,            | 10         |      |
| Leghorn,              | 2 cks 3    |      |
| Manila,               | 10         |      |
| Pernambuco,           | 1          |      |
| Rio de Janeiro,       | 1          |      |
| Valparaiso,           | 1          |      |
| <b>White Lead—</b>    |            |      |
| B. Ayres,             | 10 cks.    |      |
| <b>Whiting—</b>       |            |      |
| Melbourne,            | 50 brls.   |      |
| Valparaiso,           | 60         |      |
| <b>Zinc Chloride—</b> |            |      |
| Bombay,               | 11 t. 5 c. | £164 |

**MANCHESTER.**

Week ending January 1st.

|                                                  |                     |  |
|--------------------------------------------------|---------------------|--|
| <b>Aniline Oil—</b>                              |                     |  |
| Rouen,                                           | 5 dms.              |  |
| <b>Chemicals (otherwise undescribed)</b>         |                     |  |
| Alexandria,                                      | 10 cks. 20 kgs.     |  |
| Beyrout,                                         | 55 15 brls.         |  |
| Bombay,                                          | 5                   |  |
| Jaffa,                                           | 10                  |  |
| Lattaquie,                                       | 15                  |  |
| Rotterdam,                                       | 4                   |  |
| Tripoli,                                         | 35                  |  |
| Tunis,                                           | 1                   |  |
| <b>Coal Tar Products (otherwise undescribed)</b> |                     |  |
| Antwerp,                                         | 10 t. 16 c. 59 cks. |  |
| St. Nazaire,                                     | £930                |  |
| <b>Dyestuffs (otherwise undescribed)</b>         |                     |  |
| Alexandria,                                      | 67 bgs.             |  |
| <b>Extracts—</b>                                 |                     |  |
| Rouen,                                           | 28 cks.             |  |
| <b>Linseed Oil—</b>                              |                     |  |
| Alexandria,                                      | 40 cks. 35 brls.    |  |
| Sfax,                                            | 1                   |  |
| <b>Tar Oil—</b>                                  |                     |  |
| Rotterdam,                                       | 30 dms.             |  |
| Hamburg,                                         | 25                  |  |

**TYNE.**

Week ending December 28th.

|                          |             |  |
|--------------------------|-------------|--|
| <b>Alkali—</b>           |             |  |
| Venice,                  | 5 t. 5 c.   |  |
| Antwerp,                 | 10 4        |  |
| Amsterdam,               | 8 14        |  |
| <b>Aluminous Cake—</b>   |             |  |
| Copenhagen,              | 50 t. 3 c.  |  |
| <b>Ammonia—</b>          |             |  |
| Palermo,                 | 10 t.       |  |
| <b>Anthracene—</b>       |             |  |
| Rotterdam,               | 92 t. 19 c. |  |
| <b>Antimony—</b>         |             |  |
| Rotterdam,               | 1 t.        |  |
| <b>Barium—</b>           |             |  |
| Antwerp,                 | 10 t. 4 c.  |  |
| <b>Bleaching Powder—</b> |             |  |
| Venice,                  | 3 t. 1 c.   |  |
| Antwerp,                 | 95 4        |  |
| Hamburg,                 | 9 19        |  |
| Gothenburg,              | 5 5         |  |
| Christiania,             | 24 19       |  |
| Odense,                  | 4 16        |  |
| Amsterdam,               | 46 8        |  |
| Lisbon,                  | 5           |  |
| Rotterdam,               | 15          |  |
| Copenhagen,              | 59 14       |  |
| Terneuzen,               | 31 17       |  |
| Bergen,                  | 9           |  |
| <b>Caustic Soda—</b>     |             |  |
| Venice,                  | 12 t. 19 c. |  |
| Hamburg,                 | 60 1        |  |
| Gothenburg,              | 9 16        |  |
| Christiania,             | 2 18        |  |
| Stavanger,               | 1 3         |  |
| Genoa,                   | 22 6        |  |
| Piræus,                  | 54 6        |  |
| Amsterdam,               | 18 17       |  |
| Copenhagen,              | 4 1         |  |
| Terneuzen,               | 7 16        |  |
| <b>Litharge—</b>         |             |  |
| Antwerp,                 | 11 c.       |  |
| Hamburg,                 | 1 t. 10     |  |
| Genoa,                   | 11          |  |
| Rotterdam,               | 11          |  |

|                         |             |  |
|-------------------------|-------------|--|
| <b>Magnesia—</b>        |             |  |
| Antwerp,                | 8 c.        |  |
| Genoa,                  | 4           |  |
| <b>Manure—</b>          |             |  |
| Valencia,               | 266 t. 7 c. |  |
| Genoa,                  | 100 1       |  |
| <b>Paint—</b>           |             |  |
| Antwerp,                | 6 t.        |  |
| Bergen,                 | 8 c.        |  |
| <b>Phosphate—</b>       |             |  |
| Palermo,                | 1 t.        |  |
| <b>Saltpetre—</b>       |             |  |
| Aarhus,                 | 3 t.        |  |
| <b>Soda—</b>            |             |  |
| Venice,                 | 21 t. 3 c.  |  |
| Antwerp,                | 20 3        |  |
| Hamburg,                | 10          |  |
| Christiania,            | 11 7        |  |
| Aarhus,                 | 7 9         |  |
| Genoa,                  | 6 3         |  |
| Amsterdam,              | 20          |  |
| Lisbon,                 | 5 5         |  |
| Rotterdam,              | 10          |  |
| <b>Soda Ash—</b>        |             |  |
| Venice,                 | 35 t. 7 c.  |  |
| Piræus,                 | 10 9        |  |
| <b>Sodium Sulphate—</b> |             |  |
| Gothenburg,             | 50 t.       |  |
| <b>Sulphur—</b>         |             |  |
| Gothenburg,             | 200 t.      |  |
| Christiania,            | 150 1 c.    |  |
| Terneuzen,              | 5           |  |
| <b>Tallow—</b>          |             |  |
| Genoa,                  | 8 t. 8 c.   |  |
| <b>White Lead—</b>      |             |  |
| Amsterdam,              | 5 c.        |  |

**HULL.**

Week ending December 28th.

|                                          |                 |  |
|------------------------------------------|-----------------|--|
| <b>Alkali—</b>                           |                 |  |
| Bremen,                                  | 30 dms.         |  |
| Hango,                                   | 9 cks. 20 kgs.  |  |
| Palermo,                                 | 7               |  |
| <b>Ammonium Sulphate—</b>                |                 |  |
| Dunkirk,                                 | 91 bgs.         |  |
| Ghent,                                   | 443             |  |
| Hamburg,                                 | 200             |  |
| Palermo,                                 | 92              |  |
| <b>Benzol—</b>                           |                 |  |
| Amsterdam,                               | 25 cks. 12 dms. |  |
| Dunkirk,                                 | 24 brls.        |  |
| <b>Bleaching Powder—</b>                 |                 |  |
| Hango,                                   | 23 cks.         |  |
| <b>Borax—</b>                            |                 |  |
| Gothenburg,                              | 1 cs.           |  |
| <b>Chemicals (otherwise undes.)—</b>     |                 |  |
| Antwerp,                                 | 2 cks. 30 cs.   |  |
| Bremen,                                  | 2               |  |
| Bombay,                                  | 2,480 9 pks.    |  |
| Boston,                                  | 24              |  |
| Christiania,                             | 1518 slbs. 4 8  |  |
| Drontheim,                               | 10              |  |
| Fiume,                                   | 3 cks. 2        |  |
| Gothenburg,                              | 43 2            |  |
| Hango,                                   | 1               |  |
| Hamburg,                                 | 3 6 148         |  |
| Kurrachee,                               | 953 120         |  |
| New York,                                | 45              |  |
| Odessa,                                  | 48              |  |
| Rotterdam,                               | 2 2             |  |
| Stettin,                                 | 2               |  |
| Trieste,                                 | 20              |  |
| Venice,                                  | 20              |  |
| <b>Cottonseed Oil—</b>                   |                 |  |
| Antwerp,                                 | 557 c.          |  |
| Amsterdam,                               | 1,264           |  |
| Bremen,                                  | 181             |  |
| Fiume,                                   | 79              |  |
| Gothenburg,                              | 101             |  |
| Hamburg,                                 | 264             |  |
| Rotterdam,                               | 1,709           |  |
| <b>Creosote—</b>                         |                 |  |
| New York,                                | 350 brls.       |  |
| <b>Dyestuffs (otherwise undescribed)</b> |                 |  |
| Boston,                                  | 21 cks. 1 cs.   |  |
| Hamburg,                                 | 6 kgs.          |  |
| Rotterdam,                               | 58 bgs.         |  |
| Stettin,                                 | 58 bgs.         |  |
| <b>Linseed Oil—</b>                      |                 |  |
| Antwerp,                                 | 100 c.          |  |
| Bombay,                                  | 366             |  |
| Boston,                                  | 142             |  |
| Bergen,                                  | 32              |  |
| Christiania,                             | 309             |  |
| Christiansand,                           | 89              |  |
| Christiansund,                           | 21              |  |
| Drontheim,                               | 86              |  |
| Hamburg,                                 | 68              |  |
| Kurrachee,                               | 10              |  |

|                           |                       |  |
|---------------------------|-----------------------|--|
| Rotterdam,                | 52                    |  |
| Trieste,                  | 7                     |  |
| <b>Manure—</b>            |                       |  |
| Venice,                   | 513 t.                |  |
| <b>Mineral White—</b>     |                       |  |
| Harlingen,                | 50 bgs.               |  |
| <b>Painters' Colours—</b> |                       |  |
| Antwerp,                  | 33 cks. 2 pks 95 dms. |  |
| Bremen,                   | 3                     |  |
| Bombay,                   | 22 240 169 cs.        |  |
| Christiania,              | 1                     |  |
| Hango,                    | 1                     |  |
| Hamburg,                  | 1                     |  |
| Kurrachee,                | 2 20                  |  |
| New York,                 | 301                   |  |
| Odessa,                   | 120                   |  |
| Rotterdam,                | 27 15                 |  |
| Stettin,                  | 7                     |  |
| Trieste,                  | 13                    |  |
| Venice,                   | 3                     |  |
| <b>Pitch—</b>             |                       |  |
| Boston,                   | 200 cks.              |  |
| Dunkirk,                  | 160 t.                |  |
| <b>Soda Salts—</b>        |                       |  |
| Stettin,                  | 100 bgs.              |  |
| <b>Tallow—</b>            |                       |  |
| Hango,                    | 49 cks.               |  |
| <b>Tar—</b>               |                       |  |
| Rotterdam,                | 8 cks.                |  |
| <b>Terra Alba—</b>        |                       |  |
| New York,                 | 300 cks.              |  |
| <b>Treacle—</b>           |                       |  |
| Drontheim,                | 25 cks.               |  |
| <b>Yarnish—</b>           |                       |  |
| Bombay,                   | 50 dms.               |  |
| Dunkirk,                  | 1 cs.                 |  |
| Gothenburg,               | 3 pks.                |  |

**GLASGOW.**

Week ending January 2nd.

|                                          |              |     |
|------------------------------------------|--------------|-----|
| <b>Ammonium Chloride—</b>                |              |     |
| Spain,                                   | 5 t. 15½ c.  |     |
| <b>Ammonium Sulphate—</b>                |              |     |
| U.S.A.,                                  | 179 t. ¾ c.  |     |
| Demerara,                                | 208 13¾      |     |
| Jersey,                                  | 120 10¾      |     |
| Trinidad,                                | 50 18        |     |
| Valencia,                                | 211 13¾      |     |
| <b>Benzine—</b>                          |              |     |
| France,                                  | £62          |     |
| <b>Bleaching Powder—</b>                 |              |     |
| U.S.A.,                                  | 25 t. 13¾ c. |     |
| <b>Castor Oil—</b>                       |              |     |
| Santos,                                  | £33          |     |
| <b>Coal Products—</b>                    |              |     |
| Pitch                                    |              |     |
| Madras,                                  | £20. 10s.    |     |
| Oporto,                                  | £377         |     |
| Caen,                                    | 150 t.       |     |
| Antwerp,                                 | 405          |     |
| <b>Tar</b>                               |              |     |
| Calcutta,                                | £63          |     |
| Madras,                                  | 50           |     |
| Turkey,                                  | 148          |     |
| <b>Coal Products (otherwise undes.)—</b> |              |     |
| Rotterdam,                               | 5 t.         |     |
| <b>Cod Oil—</b>                          |              |     |
| Brisbane,                                | £51          |     |
| <b>Dried Blood—</b>                      |              |     |
| Demerara,                                | £132         |     |
| <b>Dyestuffs—</b>                        |              |     |
| Extracts                                 |              |     |
| Christiania,                             | £7           |     |
| Logwood                                  |              |     |
| Oporto,                                  | £74          |     |
| <b>Gelatine—</b>                         |              |     |
| U.S.A.,                                  | £401         |     |
| <b>Guano—</b>                            |              |     |
| Jersey,                                  | 130 t. 2¾ c. |     |
| <b>Linseed Oil—</b>                      |              |     |
| Pt. Louis,                               | 2 t. 8 c.    |     |
| Queensland,                              | 4            |     |
| Rio de Janeiro,                          | 1 ¾          |     |
| Rockhampton,                             | 4 7½         | £25 |
| Santos,                                  | 4            |     |
| <b>Litharge—</b>                         |              |     |
| Johannesburg,                            | £21          |     |
| <b>Manure—</b>                           |              |     |
| Jersey,                                  | 6 t.         |     |
| Oporto,                                  | 32           |     |
| <b>Paint—</b>                            |              |     |
| Alga Bay,                                | £82          |     |
| Christiansund,                           | 70           |     |
| Rio de Janeiro,                          | 75           |     |
| Bergen,                                  | 15 c.        |     |

|                              |             |  |
|------------------------------|-------------|--|
| <b>Painters' Colours—</b>    |             |  |
| Calcutta,                    | £12         |  |
| Cape Town,                   | 46          |  |
| Colombo,                     | 70          |  |
| E. London,                   | 30          |  |
| Rockhampton,                 | 40          |  |
| <b>Paraffin Wax—</b>         |             |  |
| Bordeaux,                    | £85         |  |
| Madras,                      | 32          |  |
| Marseilles,                  | 35          |  |
| Barcelona,                   | 96          |  |
| Russia,                      | 233         |  |
| Spain,                       | 94          |  |
| Turkey,                      | 104         |  |
| Valencia,                    | 70          |  |
| <b>Potassium Bichromate—</b> |             |  |
| Madras,                      | £56         |  |
| Rotterdam,                   | 107         |  |
| Antwerp,                     | 392         |  |
| Brussels,                    | 30          |  |
| Constantinople,              | 96          |  |
| <b>Potassium Sulphate—</b>   |             |  |
| Jersey,                      | 26 t. 10 c. |  |
| <b>Salt—</b>                 |             |  |
| Queensland,                  | 322 t. 8 c. |  |
| <b>Soap—</b>                 |             |  |
| Newfoundland,                | 1 t. 1¾ c.  |  |
| Pt. Louis,                   | 5           |  |
| Trinidad,                    | 6 16        |  |
| <b>Sulphur—</b>              |             |  |
| Demerara,                    | 4 t. 8½ c.  |  |
| <b>Sulphuric Acid—</b>       |             |  |
| Colombo,                     | £40         |  |
| Madras,                      | 100         |  |
| <b>Superphosphates—</b>      |             |  |
| Jersey,                      | 180 t. ¾ c. |  |
| Valencia,                    | 9 17        |  |
| <b>Tallow—</b>               |             |  |
| Transvaal,                   | 2 t.        |  |
| Rotterdam,                   | 4 8 c.      |  |
| Oporto,                      | 1 5         |  |
| <b>Treacle—</b>              |             |  |
| Bergen,                      | 10 t. 17 c. |  |
| <b>Yarnish—</b>              |             |  |
| Santos,                      | £60         |  |
| <b>White Lead—</b>           |             |  |
| Calcutta,                    | £35         |  |

**GOOLE.**

Week ending December 25th.

|                                          |              |  |
|------------------------------------------|--------------|--|
| <b>Alkali—</b>                           |              |  |
| Ghent,                                   | 1 ck.        |  |
| <b>Benzol—</b>                           |              |  |
| Hamburg,                                 | 48 cks.      |  |
| Rotterdam,                               | 72 11 drs.   |  |
| <b>Chemicals (otherwise undescribed)</b> |              |  |
| Antwerp,                                 | 1 ck.        |  |
| Boulogne,                                | 1            |  |
| Ghent,                                   | 6 4 cs.      |  |
| <b>Coal Products (otherwise undes.)—</b> |              |  |
| Antwerp,                                 | 1 ck.        |  |
| Boulogne,                                | 51           |  |
| Ghent,                                   | 4 1 cs.      |  |
| Hamburg,                                 | 3 1 3 dms.   |  |
| Rotterdam,                               | 352          |  |
| <b>Colours—</b>                          |              |  |
| Boulogne,                                | 1 ck. 1 cs.  |  |
| Ghent,                                   | 3            |  |
| <b>Creosote—</b>                         |              |  |
| Kuysna,                                  | 2,250 brls.  |  |
| <b>Dyestuffs (otherwise undescribed)</b> |              |  |
| Antwerp,                                 | 3 bgs. 5 cs. |  |
| Hamburg,                                 | 20           |  |
| <b>Manure—</b>                           |              |  |
| Boulogne,                                | 65 bgs.      |  |
| Bruges,                                  | 393          |  |
| Rotterdam,                               | 169          |  |
| <b>Pitch—</b>                            |              |  |
| Antwerp,                                 | 614 l.       |  |
| Dunkirk,                                 | 143          |  |

**GRIMSBY.**

Week ending December 28th.

|                                          |            |  |
|------------------------------------------|------------|--|
| <b>Caoutchouc—</b>                       |            |  |
| St. Thomas,                              | 1 cs.      |  |
| <b>Chemicals (otherwise undescribed)</b> |            |  |
| Antwerp,                                 | 5 cks.     |  |
| Hamburg,                                 | 41 dms.    |  |
| <b>Coal Products (otherwise undes.)—</b> |            |  |
| Antwerp,                                 | 2 cs.      |  |
| Dieppe,                                  | 21 cks.    |  |
| Hamburg,                                 | 1 1 btle.  |  |
| Rotterdam,                               | 4 10 4 dms |  |
| <b>Colours—</b>                          |            |  |
| Dieppe,                                  | 1 cs.      |  |
| Hamburg,                                 | 4 cks.     |  |



## PRICES CURRENT.

WEDNESDAY, JAN. 8TH, 1896.

PREPARED BY MESSRS. HIGGINBOTTOM AND CO., 116, PORTLAND STREET, MANCHESTER.

The values stated are F.O.R. at maker's works, or at usual ports of shipment in U.K. The price in different localities may vary.

## Acids:—

|                                         | £            | s.   | d.      |
|-----------------------------------------|--------------|------|---------|
| Acetic, 25 % and 40 % .. .. .           | per cwt.     | 6/   | 9/-     |
| " Glacial .. .. .                       | "            | 10/- |         |
| Arsenic S.G., 2000° .. .. .             | "            | 0 16 | 0       |
| Fluoric .. .. .                         | per lb.      | 0 0  | 3 3/4   |
| Muriatic (Tower Salts), 30° Tw. .. .. . | per bottle   | 0 0  | 10      |
| " (Cylinder), 30° Tw. .. .. .           | "            | 0 3  | 0       |
| Nitric 80° Tw. .. .. .                  | per lb.      | 0 0  | 1 5/8   |
| Nitrous .. .. .                         | "            | 0 0  | 1 3/4   |
| Oxalic .. .. .                          | nett         | 0 0  | 3 1/2   |
| Phosphoric, 1750° .. .. .               | "            | 0 1  | 1       |
| Picric .. .. .                          | "            | 0 0  | 10      |
| Sulphuric (fuming 50 %) .. .. .         | per ton      | 15   | 10 0    |
| " (monohydrate) .. .. .                 | "            | 5    | 10 0    |
| " (Pyrites, 168°) .. .. .               | "            | 3    | 0 0     |
| " " 150° .. .. .                        | "            | 1    | 5 0     |
| " (free from arsenic, 145°) .. .. .     | "            | 1    | 7 6     |
| Sulphurous (solution) S.G. 1025 .. .. . | "            | 3    | 0 0     |
| Tannic (pure) .. .. .                   | per lb.      | 0 1  | 0       |
| Tartaric .. .. .                        | "            | 0 1  | 2       |
| Arsenic, white powdered .. .. .         | nett per ton | 15   | 15 0    |
| Alum (loose lump) .. .. .               | "            | 4    | 12 6    |
| Alumina Sulphate (pure) .. .. .         | "            | 4    | 12 6    |
| Aluminaferric .. .. .                   | "            | 2    | 7 6     |
| Aluminium .. .. .                       | per lb.      | 0 2  | 10      |
| Ammonia, Anhydrous .. .. .              | "            | 0 1  | 3       |
| " 880=28° B. .. .. .                    | per lb.      | 0 0  | 3       |
| " =24° B. .. .. .                       | "            | 0 0  | 2 1/4   |
| " Carbonate .. .. .                     | nett         | 0 0  | 3 3/4   |
| " Muriate .. .. .                       | per ton      | 22   | 15 0    |
| " (sal-ammoniac) 1st & 2nd .. .. .      | per cwt.     | 39/- | & 37/-  |
| " Nitrate .. .. .                       | per ton      | 38   | 10 0    |
| " Phosphate .. .. .                     | per lb.      | 0 0  | 6 1/4   |
| " Sulphate (grey) London .. .. .        | per ton      | 8    | 12 6    |
| " (grey) Hull .. .. .                   | "            | 8    | 11 3    |
| Aniline Oil (pure) .. .. .              | per lb.      | 0 0  | 8       |
| Aniline Salt .. .. .                    | "            | 0 0  | 7 1/2   |
| Antimony .. .. .                        | per ton      | 30   | 5 0     |
| " (tartar emetic) .. .. .               | per lb.      | 0 0  | 7 1/2   |
| " (golden sulphide) .. .. .             | "            | 0 0  | 10      |
| Barium Chloride .. .. .                 | per ton      | 6    | 7 6     |
| " Carbonate (native) .. .. .            | "            | 3    | 5 0     |
| " Sulphate (native levigated) .. .. .   | "            | 42/6 | to 65/- |
| Bleaching Powder, 35 % .. .. .          | nett         | 7    | 0 0     |
| " Liquor, 7 % .. .. .                   | "            | 3    | 10 0    |
| Bisulphide of Carbon .. .. .            | "            | 12   | 10 0    |
| Chromium Acetate (crystal) .. .. .      | per lb.      | 0 0  | 6       |
| Calcium Chloride .. .. .                | per ton      | 2    | 2 6     |
| China Clay (at Runcorn) in bulk .. .. . | "            | 15/- | to 30/- |

## Coal Tar Products and Dyes:—

|                                            |                   |     |        |
|--------------------------------------------|-------------------|-----|--------|
| Alizarine (artificial) 20 % .. .. .        | nett per lb.      | 0 0 | 7 3/4  |
| Magenta .. .. .                            | "                 | 0 3 | 9      |
| Anthracene, 30 % A, f.o.b. London .. .. .  | per unit per cwt. | 0 0 | 11 1/2 |
| Benzol, 90 % .. .. .                       | per gallon        | 0 2 | 3      |
| " 50/90 .. .. .                            | "                 | 0 2 | 0      |
| Carbolic Acid (crystallised 40°) .. .. .   | per lb.           | 0 0 | 6 1/2  |
| " (crude 60°) .. .. .                      | per gallon        | 0 1 | 9 1/2  |
| Creosote (ordinary) .. .. .                | "                 | 0 0 | 1 1/2  |
| " (filtered for Lucigen light) .. .. .     | "                 | 0 0 | 2      |
| Crude Naphtha 30 % @ 120° C. .. .. .       | "                 | 0 0 | 10     |
| Grease Oils, 22° Tw. .. .. .               | per ton           | 2   | 10 0   |
| Pitch, f.o.b. Liverpool or Garston .. .. . | "                 | 1   | 14 6   |
| Solvent Naphtha, 90 % at 160° .. .. .      | per gallon        | 0 1 | 6      |
| " Lucigen" and "Wells" Oils .. .. .        | "                 | 0 0 | 2 1/2  |
| Copper .. .. .                             | per ton           | 41  | 5 0    |
| " Sulphate .. .. .                         | "                 | 15  | 15 0   |
| " Oxide (copper scales) .. .. .            | "                 | 41  | 10 0   |
| Glycerine (crude) .. .. .                  | "                 | 37  | 13 0   |
| " (distilled S.G. 1250°) .. .. .           | "                 | 75  | 0 0    |
| Iodine .. .. .                             | nett, per oz.     | 0 0 | 7 1/2  |
| Iron Sulphate (copperas) .. .. .           | per ton           | 1   | 5 0    |
| " Sulphide (antimony slag) .. .. .         | "                 | 2   | 0 0    |
| Lead (sheet) for cash .. .. .              | "                 | 12  | 10 0   |
| " Litharge Flake (ex ship) .. .. .         | "                 | 14  | 0 0    |
| " Acetate (white) .. .. .                  | "                 | 21  | 10 0   |
| " " brown " .. .. .                        | "                 | 16  | 0 0    |
| " Carbonat: (white lead) pure .. .. .      | "                 | 16  | 0 0    |
| " Nitrate .. .. .                          | "                 | 19  | 0 0    |

|                                         |            |     |      |
|-----------------------------------------|------------|-----|------|
| Lime, Acetate (brown) (ex ship) .. .. . | per ton    | 5   | 5 0  |
| " " (grey) .. .. .                      | "          | 8   | 0 0  |
| Magnesium (ribbon and wire) .. .. .     | per oz.    | 0 2 | 5    |
| " Chloride (ex ship) .. .. .            | per ton    | 2   | 7 6  |
| " Carbonate .. .. .                     | per cwt.   | 1   | 17 6 |
| " Hydrate .. .. .                       | per ton    | 17  | 0 0  |
| " Sulphate (Epsom Salts) .. .. .        | per ton    | 3   | 0 0  |
| Manganese, Sulphate .. .. .             | "          | 17  | 0 0  |
| " Borate .. .. .                        | per cwt.   | 2   | 15 0 |
| " Ore, 70 % .. .. .                     | per ton    | 3   | 10 0 |
| Methylated Spirit, 61° O.P. .. .. .     | per gallon | 0   | 1 9  |
| Naphtha (Wood), Solvent .. .. .         | "          | 0   | 3 0  |
| " " Miscible, 60° O.P. .. .. .          | "          | 0   | 2 11 |

|                                                    |              |    |         |
|----------------------------------------------------|--------------|----|---------|
| Oils:—                                             |              |    |         |
| Cotton-seed .. .. .                                | per ton      | 17 | 10 0    |
| Linseed .. .. .                                    | "            | 21 | 0 0     |
| Petroleum, American .. .. .                        | per gallon   | 0  | 0 7     |
| Stearine .. .. .                                   | per ton      | 24 | 10 0    |
| Phosphorus (yellow) .. .. .                        | per lb.      | 0  | 2 2     |
| " (red) .. .. .                                    | "            | 0  | 2 8     |
| Potassium (metal) .. .. .                          | per oz.      | 0  | 3 7     |
| " Bichromate .. .. .                               | nett per lb. | 0  | 0 4 1/2 |
| " Carbonate, 90% (ex ship) .. .. .                 | per ton      | 17 | 5 0     |
| " Chlorate .. .. .                                 | per lb.      | 0  | 0 4 1/2 |
| " Cyanide, 98% .. .. .                             | "            | 0  | 1 4     |
| " Hydrate (Caustic Potash) 90% .. .. .             | per ton      | 24 | 15 0    |
| " " (Caustic Potash) 75/80% .. .. .                | "            | 21 | 10 0    |
| " " (Caustic Potash) 70/75% .. .. .                | "            | 20 | 0 0     |
| " Nitrate (refined) .. .. .                        | per cwt.     | 1  | 1 6     |
| " Permanganate .. .. .                             | per cwt.     | 2  | 17 6    |
| " Prussiate Yellow .. .. .                         | per lb.      | 0  | 0 8     |
| " Sulphate, 90% (ex ship) .. .. .                  | per ton      | 9  | 15 0    |
| " Muriate, 80% (do.) .. .. .                       | "            | 8  | 10 0    |
| Silver (metal) .. .. .                             | per oz.      | 0  | 2 6 1/2 |
| " Nitrate .. .. .                                  | "            | 0  | 2 0     |
| Sodium (metal) .. .. .                             | per lb.      | 0  | 2 11    |
| " Carb. (refined Soda-ash) 48% .. .. .             | nett per ton | 4  | 15 0    |
| " " (Caustic Soda-ash) 48% .. .. .                 | "            | 4  | 5 0     |
| " " (Carb. Soda-ash) 48% .. .. .                   | "            | 4  | 0 0     |
| " " (Alkali) 58 % .. .. .                          | "            | 3  | 15 6    |
| " " (Soda Crystals) .. .. .                        | "            | 2  | 2 6     |
| " Acetate (ex-ship) .. .. .                        | "            | 14 | 0 0     |
| " Arseniate, 45 % .. .. .                          | "            | 11 | 10 0    |
| " Chlorate .. .. .                                 | per lb.      | 0  | 0 6 1/2 |
| " Borate (Borax) .. .. .                           | net, per ton | 19 | 0 0     |
| " Bichromate .. .. .                               | per lb.      | 0  | 0 3 3/4 |
| " Hydrate (77 % Caustic Soda) (f.o.b.) net pr. ton | "            | 9  | 7 6     |
| " " (74 % Caustic Soda) .. .. .                    | "            | 8  | 10 0    |
| " " (70 % Caustic Soda) .. .. .                    | "            | 7  | 10 0    |
| " " (60 % Caustic Soda) .. .. .                    | "            | 6  | 10 0    |
| " " (60 % Caustic Soda, cream) (f.o.b.) .. .. .    | "            | 6  | 10 0    |
| " Bicarbonate .. .. .                              | "            | 6  | 10 0    |
| " Hyposulphite .. .. .                             | "            | 5  | 10 0    |
| " Manganate, 30% .. .. .                           | "            | 16 | 0 0     |
| " Nitrate (95 %) ex-ship Liverpool .. .. .         | per cwt.     | 0  | 7 6     |
| " Nitrite, 98 % .. .. .                            | per ton      | 30 | 0 0     |
| " Phosphate .. .. .                                | "            | 13 | 5 0     |
| " Silicate (glass) .. .. .                         | per ton      | 4  | 10 0    |
| " " (liquid, 100° Tw.) .. .. .                     | "            | 3  | 10 0    |
| " Stannate, 40 % .. .. .                           | per cwt.     | 3  | 2 9     |
| " Sulphate (Salt-cake) .. .. .                     | per ton      | 1  | 6       |
| " " (Glauber's Salts) .. .. .                      | "            | 1  | 10 0    |
| " Sulphide .. .. .                                 | "            | 8  | 0 0     |
| " Sulphite .. .. .                                 | "            | 5  | 5 0     |
| Strontium Hydrate, 100% .. .. .                    | "            | 8  | 10 0    |
| Sulphocyanide Ammonium, 95 % .. .. .               | per lb.      | 0  | 0 6 1/4 |
| " Barium, 95 % .. .. .                             | "            | 0  | 0 4 3/4 |
| " Potassium .. .. .                                | "            | 0  | 0 7     |
| Sulphur (Flowers) .. .. .                          | per ton      | 6  | 15 0    |
| " (Roll Brimstone) .. .. .                         | "            | 5  | 0 0     |
| " Brimstone: Best Quality .. .. .                  | "            | 3  | 12 6    |
| Superphosphate of Lime (26%) .. .. .               | "            | 2  | 7 6     |
| Tallow .. .. .                                     | "            | 23 | 10 0    |
| Tin Crystals .. .. .                               | per lb.      | 0  | 0 5 1/2 |
| " English Ingots .. .. .                           | per ton      | 63 | 0 0     |
| Zinc (Spelter) .. .. .                             | "            | 14 | 10 0    |
| " Chloride (solution, 100° Tw.) .. .. .            | "            | 5  | 5 0     |



# THE CHEMICAL TRADE JOURNAL

AND  
OIL, PAINT and COLOUR REVIEW.

Publishing Offices: 32, BLACKFRIARS STREET, MANCHESTER.

No. 452

SATURDAY, JANUARY 18, 1896.

Vol. XVIII.

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## INDEX and TITLE PAGE for VOL. XVII.

WILL BE ISSUED WITH NO. 457, FEBRUARY 22, 1896.

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TO survey the past year and say off-hand in what particular manner it has been characteristic is almost impossible, and yet it has been noteworthy. There have been several changes of a radical nature, and there have also been new developments, which at present can only be said to be in the problematical stage, though full of promising possibilities. Looking at the events of the year from all points, however, we are prone to the opinion that the last twelve months has been essentially a period of fulfilment, for in the majority of instances it is the events of previous years that have either been further elucidated or carried to maturity. The chemical trade has mainly provided the revolutionary incidents, but if due consideration is accorded to the other classifications into which we usually divide this summary, it can be plainly seen how many of the advances have been in reality works of completion. Strikingly is this the case with

### ADVANCES IN SCIENCE,

in which the establishment of Argon, and the addition of Helium to the list of elements, stand out most prominently. In this connection a very large amount of work has been done, particularly on the nature of the gases given off by various minerals when acted on by acids. Much investigation has also been prosecuted in determining the precise character, composition, and properties of these two juvenile members of the chemical family.

In general research a great deal of interesting work has been carried out, and there is good reason to hope that this somewhat neglected branch of science will receive increased attention in the future, as, with the inception of the Salters' Company Research Fellowship, other research Fellowships have been started, and are bearing good fruit. The chief advances in connection with low temperature research have been of a nature that renders them equally entitled to consideration under the head of technology, but we have dealt with them here, because, in spite of Professor Dewar having devised means by which liquid air and other liquid gases can be easily, and comparatively cheaply, obtained for demonstration or inquiry, the bulk of the work is as yet more or less of purely scientific interest. Before leaving this matter we ought to add that as far as we can learn Professor Dewar's success is largely due to his having adapted the Linde apparatus that has so long and satisfactorily been used in connection with cold storage.

In relation to gases Mond, Ramsay, and Shields have been busy studying the occlusion of hydrogen and oxygen by platinum black; J. J. Thomson has been giving his attention to the electrolysis of gases, a most interesting subject; and the nature and physiological action of "black damp" has been investigated by J. Haldane. With regard to work bearing on more general subjects we have the researches of Vernon arcourt on the "Laws of Connection between the



Conditions of Chemical Change and its Amount;" of Divers and Haga on the "Constitution of Nitrososulphates;" of Perman on the "Escape of Gases from Solutions of Varying Concentration;" and Reddrop and Ramage's "Inquiries into the Volumetric Estimation of Manganese." This, so to speak, is the pick of the research work of the year as far as this review is concerned, though, of course, there has been an abundance of good work done in subjects of less direct interest. Moreover, we have purposely omitted to mention several important investigations that have been executed on special products, or in specific spheres, as it is desirable that they should be individually dealt with under

#### TECHNOLOGY.

Technical education is being as actively propagated as ever, and is perhaps a little better understood. Many of the important schemes of previous years are now on a working basis, and it remains to be seen what measure of success will attend their application. Thus, the Schorlemmer Laboratory at Owens' College has been completed and opened, and, to judge by the progress since last May, will form an able ally to the extensive textile dyeing and printing industries of the Lancashire district. Among technical schools proper, the Birmingham Municipal School was finished with the close of the year, being opened on December 18th last by the Duke of Devonshire. The building of the Salford Technical School, which promises to be one of the largest in the country, is completed. As a building it is undoubtedly fine, and we only hope that the interior equipment will be wholly in keeping with the exterior. The City and Guilds of London Institute steadily perseveres in its ever increasing sphere of work and utility. The number of students under its control keeps as large as ever, and the entries for the technological examinations were 12,864, an increase of 386 on 1894. The certificates of the Institute are now competed for in 315 centres in the United Kingdom, as well as in New South Wales, New Zealand, Natal, and Bombay. The percentage of failures is decreasing, having fallen from 44.6 to 43.4.

While on the subject of technical education abroad, it may be mentioned that since so much is being said about what we have to learn from Germany, Switzerland, and the United States, we have given elsewhere, in this issue, an outline of the curriculum of what is considered one of the best technological schools in the States. In addition to the efforts that are being made at the Leeds College to apply science to tanning, this industry has been further strengthened and benefited by the opening of the tanning school and laboratory at the Herold's Institute, Bermondsey, in affiliation with the Borough Polytechnic. The practical research department of the Imperial Institute is beginning to look up, and since its inauguration, promising investigations have been in progress upon Indian iron ores, coals, fibres, dyestuffs, tanning materials, turpentine, and various oils and extracts, in addition to iron ores, limestones, and iron oxide paints from New Zealand. A glance at these widely varying products will show how diverse are the industries which will probably derive benefit from these experimental investigations.

To make but passing mention of all the leading technological features of the period under review would entail much aimless repetition, as it is to these matters that our columns are chiefly devoted. It is expedient though that we should here enumerate some of the principal subjects in which "technological research" has been practised. By so doing we chronicle what may be termed the master researches, from which the numerous correlatives may be traced in any desired direction, by those who are seeking information, but have not yet scented the trail. Thus the dyeing craft will be interested to hear of the work of Dr. Perkin on the roots of the *Polygonum Cuspidatum*, the extract of which resembles madder, other members of the same genus giving indigo blue and yellow colours; also the roots of the *artocarpus integrifolia* indigenous to India and Burmah, while the same worker has extended our previous knowledge of kamala. Dr. Schunck has been devoting further attention to yellow colouring matters, as well as studying the chemistry of chlorophyll in conjunction with Marchlewski, and Geldard has been investigating the composition of Persian Berries. The coal and other industries will derive enlightenment from the work of Dr. Clowes on the Composition of Extinctive Atmospheres produced by Flames; the gas industry by Lewes's study of the Luminosity of Flames; and papermakers by Messrs. Cross and

Bevan's contributions to the Chemistry of Cellulose. The thanks of biologists are due to Dr. P. E. Frankland for revealing something of the conditions of Bacteriological Life in Thames Water, and to Messrs. Frankland and Ward for their fourth conjoint report on the Bacteriology of Water. In reference to this subject it is, moreover, pleasing to record the decision of the Glasgow Town Council to equip a complete bacteriological laboratory for the Health Department. The mining industry can, and ought to, gain help from the experiments made by J. S. MacLaurin upon the Action of Potassium Cyanide Solutions on Gold and Silver, the special investigation of which matter will impress the observant with the important bearing which the development of the chemical extraction of gold has upon the

#### CHEMICAL AND ALLIED INDUSTRIES.

We should again transgress and defeat our object if we were to dwell at length upon the alkali combination and the pronounced developments in electro-chemistry and metallurgy appertaining to the production of alkali and aluminium, though their recital would constitute some of the most startling passages of the year's history. We must, therefore, pass to equally interesting if less momentous matters. The trades with which we are concerned have to congratulate themselves upon the satisfactory re-construction of the Weaver Trust, and the Salt Union upon the healing of that long-standing sore, the Brine Pumping Compensation Area. After several years of unrelaxed perseverance, Mr. L. Mond is now able to work up 1½ tons of nickel per week from nickel copper matter by his nickel carbonyl process. The efflux of time has brought the alkali trade a new and promising Chief Inspector to exercise a watchful, and when necessary corrective, care over its works, and in connection with this industry reference may be made to the additions to the central management of the United Alkali Company, Limited. The hopes of the Scotch oil industry have been raised and dispelled by the beginning and collapse of the solid paraffin combination, and the same industry has tasted slightly the bitterness of labour disputes, owing to the shale miners' strike. The question of river pollution has been fairly prominent, while sewage treatment has oftentimes been a leading theme, the main point of contention having been the efficiency of filters. It is something, however, to be able to say that both Salford and Manchester appear to have all-but settled the sewage *crux* as far as they are concerned. Among matters of minor importance there have been the successful establishment of the chemical and wood pulp import trades at Manchester, the Tebessa phosphate dispute, and the erection of the first important paint mills in Ireland.

The year has been fraught with many interesting business changes, the following important firms having converted their concerns into limited liability companies:—Messrs. S. G. Bailey and Co., Ltd., Bindley and Sons, Ltd., J. Fison and Co., Ltd., Hanger, Watson, and Harris, Ltd., Mear and Green, Ltd., E. Packard and Co., Ltd., Sharp Bros., Ltd., and J. Woolley, Sons, and Co., Ltd. For business reasons Messrs. Levinstein, Ltd., and Galloways, Ltd., reconstructed; the Cheshire Alkali and Salt Co., Ltd., doing the same on financial grounds. Among the entirely new ventures we find The South African Saltpetre Fields Co., Ltd., Hyatt's Sulphate White Lead Co., Ltd., The American Alkali Co., Ltd., The Castner-Kellner Alkali Co., Ltd., The Kali Syndicate, Ltd., and the Scottish Oil and Chemical Co., Ltd.

There has been no paucity of instructive legal cases, for the highly important Cyanide Gold Recovery case has been brought to an end; the Cordite appeal has been disposed of; the long protracted litigation between The Salt Union and Deakin has been concluded; while such cases as Leonhardt v. Kalle, Lancashire v. Roburite Explosives Co., Ltd., Mersey and Irwell Joint Committee v. Salford Corporation, and the Barff and Bower Patent case have likewise been features of the year.

Passing to the inventions of the year, the activity that has been displayed, as shown by the

#### PATENTS IN 1895.

has been considerable, though the actual numerical total of 25,053 is the lowest since 1892. We believe, however, that in two cases the progressive number stood against a blank, making the actual number of applications 25,051 for the year. There has been an increased crop of patents referring to chemical and electro-chemical processes, while



fertilizers have seemingly received additional attention. Of applications for letters patent for *Chemical Processes* there have been 282; *Chemical Plant and Apparatus*, 99; *Electro-Chemical Processes*, 51; *Electro-Chemical Apparatus*, 19; *Paints and Pigments*, 31; *Sewage*, 30; *Artificial Fuel*, 16; *Oils and Fats*, 35; *Smoke Prevention*, 22; *Soap*, 29; *General Hygiene*, 10; *Explosives*, 9; *Manures*, 29; *Boiler Disincrustants*, 5; *Artificial Stone*, 9. By comparing these figures with those given in the *Journal* No. 400, p. 34, it will be seen that there have been several fluctuations in the minor subjects, in which the decreases predominate, but, on the whole, the rise in the totals of the three first, and most important items, lead to a net increase.

Owing to various reasons,—notably the General Election,—things have been quiet in connection with

#### LEGISLATION.

No Acts of importance have been passed, but there are one or two matters in the wind which will need close attention shortly. For instance, Mr. H. Samuel gave notice in September of a Bill to Regulate the Hours of Labour in Chemical Works, which is likely to be heard of next Session. Then we have two new committees sitting to inquire into dangerous occupations, and further legislation affecting animal manure and one or two other trades is not improbable. A fresh inquiry upon the flashpoint of burning oils is promised, and it is yet doubtful whether something in the shape of more definite control may not result from the inquiry upon the compressed gas industry. In connection with legal matters it is interesting to note that the New Commercial Court has been instituted and gone off well, while Chambers of Arbitration still thrive.

There is now little that remains to be said concerning '95 save upon a few

#### MATTERS OF GENERAL INTEREST.

The gas industry has been marked by eventful progress. The ultimate part acetylene will play is hard to delineate, and general opinion is not very favourable as to its future. Nevertheless, it is as well to remember that at one time a wickless flame was tabooed as a snare and delusion. Incandescent gas lighting continues to grow in favour, in regard to which a pretty little patent law puzzle threatens to present itself. Parallel with the steady growth of the electrical industries a new field has been opened up for the now somewhat obsolete illuminant—oil, since the development and introduction of horseless or motor carriages bid fair to grow apace. Side by side with this French revival comes the approaching adoption of the Metric System, while another sure sign of quiet progression is the ever increasing endeavour to promulgate hygienic principles and their practice.

By this reference to progression our thoughts instinctively turn towards the future, and in so doing we must close the chronicles of 1895. The future is always, and perhaps mercifully, a closed book, the pages of which can only be read by us in the past tense. The present is just now a period of expectations and possibilities, the fulfilment of which is awaited with fears as well as hopes. One thing is certain. We have experienced bad times during recent years, and though trade is moving in the right direction, it shows no promise of improving by leaps and bounds; yet despite everything, the past year testifies to successful completion in many directions. Truly the uses of adversity are sweet. If the future is fairly faced with the fortitude that these considerations should inspire, there need be no forebodings about the records of the current year, in spite of the badly "tempered" condition of that mainspring of all industries, coal.

**ESTIMATING IRON IN OLEINE.**—Place 100 c.c. of the oleine to be tested in a graduated tube, provided with a glass stopper, add 20 c.c. of dilute  $H_2SO_4$  (1:1), and a few drops of yellow prussiate of potash solution (about 10%). After well shaking add 25 to 50 c.c. of ether, and again thoroughly shake the whole. The fatty acid dissolves in the ether, and the latter easily separates from the acid water on standing. If iron is present a deep blue colouration will be manifest at the junction of the layers. The test can be made quantitative by comparing the colour with that of solutions containing known quantities of iron.

### THE DUFF PATENT GAS PRODUCER.

THERE are several different kinds of producers employed in chemical works, the oldest of which is the Siemen's Producer, with horizontal grate bars, and a slow draught. The application of a steam blower to this producer increases greatly the amount of fuel gasified, but at the same time produces a large amount of clinker, during the removal of which gas cannot be made.

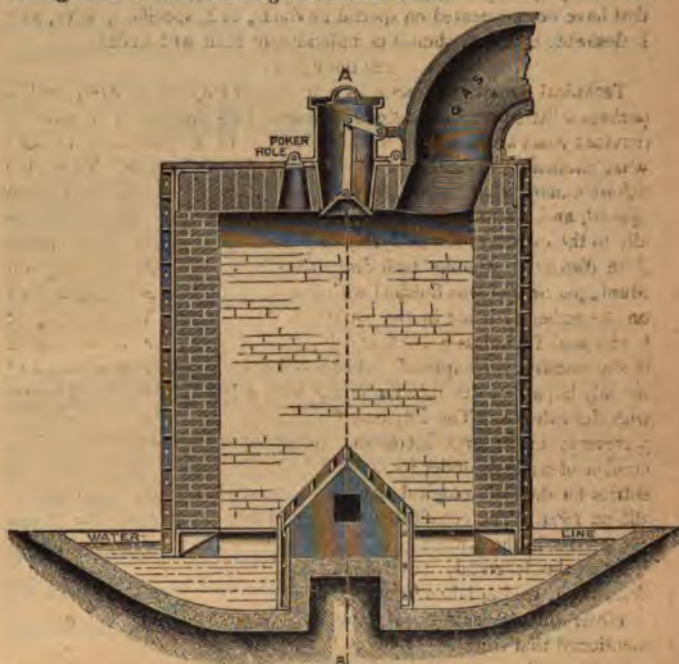


FIG. I.

The Duff Producer, as will be seen in Fig. I., has a water seal at the bottom, and a sloping grate. Added to this there is a steam blower. The formation of clinker is avoided both on the grate bars and on the sides of the furnace, as the blast passes up the centre. Another good feature is that as the ashes fall from the grate they are easily raked out of the water trough, and fresh fuel is continuously fed through the

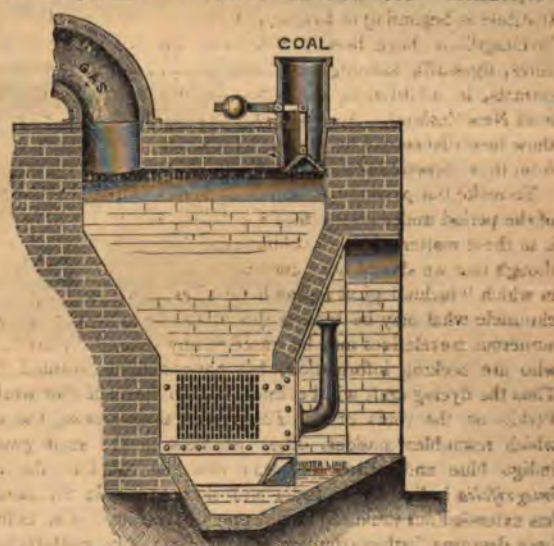


FIG. II.

hopper, so that the supply of gas is always regular. All these items mean a great saving of labour in the working, which is said to amount to about 30 per cent., as well as a saving of fuel, for no gas can escape on account of the water seal.



The producer we inspected was working with coke breeze, and the gas was very clear when ignited by the admission of air, whilst the temperature was regulated very easily in a similar way. The quantity of gas made depends on the regulation of the steam blower, and the plant can be easily stopped. There have already been 150 gas producers of other types altered to this system, thereby doubling their production, and in some cases more than trebling it. We understand that, practically speaking, any existing producer can be altered to this system, Fig. II. showing a Siemen's Producer altered by the addition of the Duff grate, water bottom, and steam blower. The makers are Messrs. W. F. Mason, Limited, engineers, Longsight, Manchester.

## The Patent List.

*This list is compiled from Official sources in the Manchester Technical Laboratory, under the immediate supervision of George E. Davis and Alfred R. Davis, who report professionally upon the value of Chemical Patents.*

### APPLICATIONS FOR ENGLISH LETTERS PATENT.

- Improvements in Treating Linseed Oil. J. E. Bedford and C. S. Bedford. 5. January 1.  
 Anti-Incrustation Fluid. C. B. Moore and F. Turner. 48. January 1.  
 Improvements in Apparatus for Burning Cement-making Materials, Lime, Chalk, etc., and Obtaining Carbonic Acid Gas therefrom. W. R. Taylor. 63. January 1.  
 Preventing and Removing Boiler Incrustation. G. Bailey. 102. Jan. 2.  
 Improvements in the Process of Extracting Metals from Solutions. H. F. Julian. 128. January 2.  
 Improvements in the Prevention of Phylloxera. J. Fuchs. 132. Jan. 2.  
 Improvements in the Manufacture of Paper Pulp from the Broom Plant. H. H. Lake. 210. January 3.  
 Improvements in Apparatus for the Treatment of Smoke, etc. R. Moodie. 233. January 3.  
 Improvements in Apparatus for Degreasing and Scouring Wool, etc. G. E. Wright and W. Monk. 240. January 4.  
 Rendering Waste Leather Soluble and Applicable as a Manure. J. Hudson. 289. January 4.

### ABSTRACTS OF LATEST COMPLETE SPECIFICATIONS.

*These abstracts are specially prepared for the Chemical Trade Journal and ALL RIGHTS of publication are RESERVED. This is the earliest series of abstracts of Chemical and allied patents accessible to the public.*

- Improvements in Plant for Distilling, Cracking, or Gasifying Oils, Tars, or any Liquid Hydrocarbons. R. V. Horsfall, Slaithwaite, Yorkshire. Eng. Pat. 2,188. Jan. 31, 1895.

The object of this invention is to so set the retorts that they are subjected to a progressively-increasing temperature. To this end, the retorts are set in tiers, either horizontally or at any desirable angle, each retort being enclosed in a separate heating chamber through which the gases from an adjacent furnace are caused to circulate. In this way, it is claimed, gas of high illuminating power can be more readily produced. For particulars, the specification and the nine accompanying drawings must be consulted.

- Process for the Production of Caustic Lyes of the Alkalies. O. Imray, 28, Southampton Buildings, Chancery Lane, London (communicated by the Chemische Fabrik Rhenania, Aachen, Germany). Eng. Pat. 3,485. Feb. 18, 1895.

This invention aims at utilising all the caustic lime when causticising alkalies, and facilitating the removal of the latter in the washing process. The vessels used have a grating at the top to prevent accidents, with a central opening which permits the introduction of a sieve-like vessel containing lime. At the bottom provision is made for the introduction of steam. The first stage of the process is as follows:—Crude carbonated lye is diluted with previous washwater to 17° B., and steam blown in until a temperature of 70° C. is reached, bringing the gravity down to 14° B. Lime is placed in the sieve basket, and is rapidly taken up by the solution. The steam supply is then cut off, the sludge settled, and the caustic lye run off to be worked up into solid caustic. To the sludge a fresh batch of carbonated lye is added, diluted, and boiled up until the whole of the caustic lime is utilised.

The partially-causticised lye is then run off, and the residue removed; the half-finished lye being treated with more lime in the manner described until perfectly causticised, when the cycle of operations thus completed is once more begun. The consequences of this process are the saving in lime and the better extraction when washing the sludge, owing to its consisting wholly of calcium carbonate instead of a mixture of carbonated and caustic lime. The causticising of the alkali is almost entirely complete, but a perfect conversion can only be achieved in a state of dilution, which is impracticable owing to the cost of concentrating such weak lyes.

- A Substitute for Indiarubber, Guttapercha, and Substances of a like Nature, and Process of Manufacturing the same. E. Hornung, XVIII., Weinerstrasse, 76, Vienna, Austria. Eng. Pat. 20,243. Oct. 26, 1895.

The substitute consists essentially of a mass of glue precipitated by chemical reagents. Thus an aqueous solution of any common glue, or glue substitute is precipitated with tannic, or muriatic acid, alum, or chlorine if in the presence of stannate of soda. To the mass a small quantity of rubber, &c., is added, and any inert substances, as pulverised cork or other fibrous and mineral products of a desirable nature. If the substitute is to be kept soft, vaseline, fats, oils, or glycerine are also finally incorporated.

- Improvements in the Treatment or Oxidation of Fixed Oils, Fats, and the like, and the Application thereof as a Menstruum for Paint, Varnish, Oilcloth, and the like. S. Banner, 8, Fazakerley-street, Liverpool. Eng. Pat. 24,103. Dec. 11, 1894.

In the oxidation of linseed oil by simple blowing and heating without the aid of dryers, the oil at a certain point gets so solid that it can be treated no further, and is moreover practically insoluble in ordinary solvents. By this process, however, a very highly oxidized oil is obtained, which is nevertheless a viscid liquid. This is very simply accomplished by adding a light hydrocarbon during the usual blowing process, before the oil reaches that stage of solidification at which it is insoluble. If an exceptionally high oxidized oil is required, dryers (and more particularly the compounds known in commerce as the acetate or borate of manganese) are also used.

- Improvements in the Electrolytic Treatment of Tin, and its Separation from Alloys and Mechanical Mixtures. C. F. Claus, junior, Waunarllydd, near Swansea, and H. S. Sutton, Neath. Eng. Pat. 297. Jan. 4, 1895.

Tin is recovered from "scrap" by immersing in a bath of alkaline sulphide, which is preferably heated, and contains 1 part of sulpho-stannate of soda and 2 parts of water. A current of about 10 amperes per square foot of anode is then sent through, the material itself being used as the anode and the separated tin deposited on a suitable cathode. If the deposit of metallic tin should contain arsenic or antimony, the deposit is immersed in a bath of dilute hydrochloric acid, to which hyposulphite of soda is added as required, and a current again sent through.

- Treatment of Drying Oils. E. Andreoli, 18, Somerleyton-road, Brixton, S.W. Eng. Pat. 25,324. Dec. 31, 1894 (under International Convention July 20, 1894).

The oils are oxidised by means of ozonised air or ozonised oxygen passed through them at a gentle heat. The superoxidation is hastened by the addition of hydrocarbons boiling over 100°C. or of tallow. Previous to the ozone treatment the oils have to be freed from albuminous matters, &c., with tannin, &c., otherwise the albuminous and mucilaginous bodies form an insulating layer around the molecules of the oil, hindering the oxidation. To oxidise the oil to solidification point it is put through a series of glass plates stacked between pointed grids as detailed in patents 17,426/91 and 9,631/92. The oil is converted into a white solid, which can be removed from the plates by scraping or otherwise.

THE ESTIMATION OF ARGON.—A method for the quantitative determination of argon has been brought before the Academie des Sciences by M. Schloesing, jun. The method does not vary materially from that proposed by Prof. Ramsay, only M. Schloesing has found that instead of using very large volumes, 1.5 litres is sufficient if all the measurements are accurately made over mercury. The O and CO<sub>2</sub> are absorbed in the usual way and the mixture of nitrogen and argon passed over magnesium, leaving pure argon.



## Paper-Makers' Column.

### PREPARING BLUE-MOTTLED PAPERS FROM DYED CELLULOSE.

[SPECIALLY CONTRIBUTED.]

In the preparation of coloured papers the operations and methods of the dyer are generally perfectly applicable. The two cases are indeed parallel, although there is a difference, inasmuch as, in the case of dyeing cotton and linen fabrics, the process of fixing the dye upon the fibre must necessarily be more complete, as mostly all of these fabrics are washed while they are in use, whereas paper is never subjected to this treatment. The coal-tar dyes are the most suitable for the preparation of nearly all coloured papers. In some cases, however, other mineral lakes, or inorganic dyes, as they may be called, are used.

The main point to be observed in dyeing paper pulp is first to get the fibre in such a state that it will retain the dyeing agents upon its surface. The re-agents most frequently used for this purpose are tannic acid, alum or sulphate of alumina, and the salts of lead and iron. Some of these have the power of fixing or attracting the dyeing matters, forming with them insoluble compounds. Some, on the other hand, combine with another salt, producing the coloured lake itself. As examples of this latter class, we have the formation of Prussian blue from ferric salts, and yellow prussiate of potash and of alizarine reds and pinks from basic alum and alizarine paste. The aniline dyes are "fixed" with various mordants—tannic acid, alum, and soluble lead salts being the most frequent in use, and some of which exert a more or less powerful influence in the shade of the colour produced. For example, with lead acetate, eosine throws up a blueish red, whereas with sulphate of alumina or alum the red assumes a fiery tone.

When pale colours are needed the process of tinting the pulp is simple, and generally requires little or no mordant if due care is exercised that the original colour of the fibre is sufficiently good to start with. When, however, very fast and deep shades are required, such as navy blue, the dyeing of the pulp must be carried out with care and precision so as to get the whole of the colour well fixed in the fibre.

Thus it is that in the manufacture of red and blue mottled papers, the dyed fibres have hitherto been derived from selected Turkey red and navy blue cotton and linen rags, which form the basis of the mottle. These rags after careful washing are beaten up by the themselves in a separate engine, and when sufficiently fine are added to the other white or tinted stock in a second engine. The amount of pulp required to produce the mottle is very small, being in many cases not more than one half of a per cent. of the whole contents of the engine.

The foregoing is unquestionably a simple and certain method of preparing mottled papers, but the necessity of producing cheaply has given rise to the following method of dyeing wood cellulose for the preparation of blue mottled papers.

In the absence of a sure and easily-applied method of dyeing with indigo, a prussian blue formed by the action of yellow prussiate of potash on an iron salt, with subsequent oxidation with a hypochlorite, is adopted. The pulp taken is ordinary unbleached sulphite, but soda or sulphate cellulose are equally suitable, and the pulp is well brushed out in the engine to ensure complete disintegration of the fibre, and partly "beaten" to ensure regularity of length, while if heated to 140°F. the mordanting process will be facilitated. After this the nitrate of iron mordant, which consisted of 5 per cent. of the weight of the pulp together with an equal weight of basic sulphate of alumina, is added. Alumino-ferric cake is as suitable, and much cheaper to use than sulphate of alumina or alum. The term "basic" as here applied means that the acid property of alum is partly neutralised by adding to the alum liquor a small quantity of soda crystals, dissolved in warm water, till flakes of hydrated alumina are precipitated. On the addition of the iron and alum liquor the pulp assumes a rusty brown, due to the deposition of basic salts of ferrous and ferric oxide. These iron salts are so firmly "fixed" that no amount of washing will remove them, and so the deep blue lakes they form with yellow prussiate of potash are naturally also "fixed" on the pulp. After the pulp has taken up as much of the iron

as it will, it is advisable to wash it thoroughly to remove the traces of the ferrous and ferric salts still remaining in solution.

Eight pounds of yellow prussiate of potash are then weighed off for every 100 lbs. of dry pulp, and when dissolved in warm water the solution is gradually added to the engine while the pulp is circulating. The best way to do this is to syphon the prussiate solution into a perforated shoot placed across the engine in front of the roll. This ensures perfect distribution of the solution and a more uniformly-dyed pulp.

The blue colour produced is by no means bright. On the contrary, it is dull, and it is necessary to add an oxidising agent to get the characteristic bronze-blue shade; bleach of 7° Tw. is used for this purpose, using 3 gallons to 100 lbs. of dry pulp. It should be added in the same way as the yellow prussiate. Should any free chlorine be evolved, this will not interfere with the blue, but, on the contrary, will add to its brilliancy.

After thorough mixing by continued circulation the dyed pulp is thoroughly washed. It may happen that the colour will lose its brilliancy by washing too much. This, however, is not a serious matter, as the addition of a little alum will generally brighten it again. In summarising the process we arrive at the following:—For every 100 lbs. of dry pulp we require 5 lbs. nitrate of iron, usual strength; 5 lbs. alumino-ferric cake, rendered basic with solution of crystal soda as described; 10 lbs. yellow prussiate of potash; and 3 gallons of 7° Tw. bleaching powder solution, diluted with the same bulk of cold water.

The pulp, after dyeing and washing, is run into the draining chest, and allowed to remain there a few days before use. When using it, it is added to the other paper stock, when the latter is nearly ready for the stuff chest. A good mottle will be produced in this way, and if ordinary care and skill be exercised in the dyeing it will not bleed, so as to alter the original "ground" of the ordinary "stuff" of which the paper is made.

### MECHANICAL WOOD PULP IN SCANDINAVIA.

[SPECIALLY CONTRIBUTED.]

Mechanical wood pulp, or ground wood, was invented by Gottlob Keller about 50 years ago. At that early period it found a very spare market owing to the quality not being considered good enough to be manufactured into paper. Its short nature, and lack of felting power, went strongly against it, but since that time it has gradually increased in consumption, being now produced in vast quantities for the production of cheap printing papers. By itself, although it can be made into a respectable sheet of paper, it is not used; but is usually blended with the so called wood cellulose or chemical wood pulp. The papers upon which our newspapers are printed are composed almost exclusively of wood cellulose and mechanical wood pulp, in the proportion of 10 to 20 per cent. of the former to 90 or 80 per cent. of the latter. England not being a wood producing country, this pulp is not manufactured here. It is, however, imported in large quantities by English paper making companies for the production of common papers and those named above.

The principle of its manufacture has not been altered since the days when Gottlob Keller first made it; but the apparatus in detail has naturally been much improved. Stated in the simplest way, the manufacture consists in grinding white spruce to a fine powder by the aid of revolving sandstones. Sometimes poplar is used, the resulting pulp being whiter and softer than that made from spruce. In point of fact, the pulp partakes largely of the character of the wood from which it is made. Poplar, although yielding the finer quality of pulp, does occur abundantly enough to make its use universal, and hence almost the whole of the mechanical wood pulp used in the paper industry is obtained from white spruce. Even this varies in character in different countries, and with the soil upon which it grows. Canadian spruce, it is said, yields a better pulp, that is, a pulp softer, more pliable, and whiter than the spruce found in Scandinavia. This is declared to be the case by those practical paper makers who have experimented with both Canadian and Scandinavian pulps. The results are interesting, as pointing to the influence which soil and climate have upon the growth of the pine family, and thus upon a manufacture of universal importance, namely,



the manufacture of cheap papers. It cannot be denied that when once a mechanical wood pulp can be manufactured having sufficient felting power in itself to yield a sheet of paper strong enough to withstand the strain of the ordinary printing press, the use of wood cellulose in the composition of news-paper will cease altogether.

By far the larger part of the mechanical wood pulp used in England is imported from Scandinavia, from Norway and Sweden. The close proximity of these extensively pine covered countries lends itself admirably to a large trade with us in this article, and in view of this we propose touching briefly on the extent of this manufacture in these two countries, and also in brief outline upon the details of the manufacture itself.

#### THE TRADE.

Speaking of works exclusively employed in wood grinding, Norway is the larger producer, although it is less populated, and is the smaller country by far. Its annual production is about 150,000 tons of dry mechanical wood pulp, the three varieties produced being white pine, poplar (or aspen), and brown pine pulp. The output of brown and aspen is, comparatively speaking, very little less than 5 per cent. of the whole. The production of these 150,000 tons of dry pulp per annum represents an available water power equal to 150,000 horse power. This power is generally derived from the natural waterfalls occurring in the country, and which may be said to be capable of supplying an unlimited quantity of mechanical force for industrial uses.

The number of works in Sweden employed exclusively in this manufacture are more numerous than in Norway, but on an average are not so large. They vary in manufacturing capacity from 1,000 tons of wet pulp per year to about 13,000 or 14,000. The ninety factories or so in active work produce about 120,000 tons of dry pulp per annum, representing in the aggregate about 120,000 horse power. As in Norway, the whole of this power is derived from waterfalls.

Besides the above quantities there are many factories in both countries that grind wood pulp for their own use. These are chiefly paper and mill board works, and consume annually large quantities of wood for this purpose. Not unfrequently the pulp manufactured in excess of the requirements of these works is disposed of through the usual trade channels.

#### THE MANUFACTURE.

The manufacture as carried on in Scandinavia is run on the following lines. The white pine trees, after being cut in the forests and floated down the waterways to the factory, are taken direct and cut into pieces varying from 15 to 24 inches long. These pieces are then barked in the usual way either by hand or by being held against a revolving disc having a knife fixed in a slot across its face. The piece of wood is turned slowly while being held against the disc to remove the outer bark and as little of the good wood as possible. In some works they prefer to remove the outer bark by placing the cut logs in a large revolving vessel with water, the rubbing action of one log against the other serving to separate the bark from the good wood.

After cleaning, the sheet logs are taken to the grinding room. The grinder varies a good deal in different works, both in design and size. Some employ horizontal machines, some vertical, varying in size from 4ft. to 5ft. diameter, and from 12in. to 24in. in width of face. The grinder consists essentially of a sandstone, fixed firmly by means of two side plates on a shaft which passes through its centre. This stone is encased in a sheet-iron cover, having two or more pockets or square boxes on its upper side for holding the pieces of wood to be ground. These pockets are provided with side doors for the introduction of fresh pieces of wood, and also with movable pistons actuated by chain gearing, or by hydraulic direct acting cylinders, which cause the piston to press the wood forward against the stone. The stones revolve at a high speed, and their grinding faces are periodically grooved diagonally by the aid of a specially arranged steel cutting roller, which is held against them as they revolve. The pieces of wood are laid against the grinding surface of the stone parallel with the shaft, and in the process of grinding a plentiful supply of water is allowed to flow upon its face. The object in placing the wood in this way is to produce a ground product fibrous in character, and so possessing considerable felting power.

The grinding is simply carried out, no labour of a highly-skilled nature being required. There are, however, many points requiring attention if a good product is desired, mainly connected with obtaining the requisite degree of fineness. The condition of the stones, which are generally sharpened or regrooved every 24 hours or so, and the pressure of the wood against the rubbing surface, regulate in some degree the finenesses of the resulting pulp. So, also, with regard to the amount of pulp produced by each stone, which depends upon the fineness of the pulp and upon the mode of sharpening the grinding face of the stones, etc.

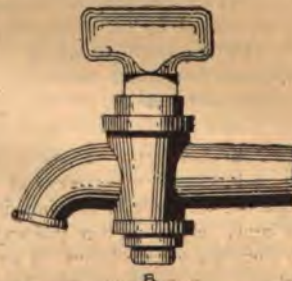
The ground wood, with the excess of water, runs into a shoot below the grinder, and is conveyed to the sorters. Then machines strain the pulp into various qualities. In some works only one quality is produced; in others two, and even three, qualities are made. In America and Germany the sorting is carried out in this way, the qualities being separated according to the size of hole through which the ground wood will pass. These sorters, like the grinders, differ widely in design and arrangement, although the principle upon which they act is common to them all. In form and action they are not unlike the ordinary jog strainer. Some manufacturers, however, employ plates, having round holes, instead of the usual slits, through which the fine pulp passes, the size of the hole or slit regulating the quality. All the coarser particles which will not pass through the plates are, in the majority of cases, run away as waste.

The sorted pulp is now allowed to flow into the "stuff" chest of a wet machine, where it is deposited against the wire gauze of a partially immersed revolving drum. The immersed part upon which the pulp is deposited is pressed against a thick woollen felt, which removes the pulp from the wire gauze and carries it to a wooden roller, which in its turn picks it up from the felt and in course of time becomes covered with a thick sheet of accumulated pulp. By a dexterous movement the attendant at the machine inserts a wooden knife in a groove along the face of the roller, and cuts the thick sheet of pulp. It is then removed, placed under a hydraulic press, and subjected to such a pressure that expresses the water, leaving 45 per cent. of dry wood and 55 per cent. of moisture. After being packed in bales it is put on the market as "wet wood pulp."

#### INTERCHANGEABLE TAP PLUGS.

MESSRS. C. H. C. Rudd and Partners, of Thistle Works, St. Anthony's, Newcastle-on-Tyne, have recently made a new departure in regulus, or other suitable metal-bodied taps having interchangeable stoneware plugs.

Taps similar to these have been known to users of corrosive fluids for some considerable time, but have not been generally used, owing to the fact that when a plug was broken another could not be had to fit into the barrel—hence the entire tap was rendered useless, and a new tap had to be fixed.



By Mr. Rudd's new invention this obstacle has been entirely overcome, every plug being made of precisely similar taper and dimensions. If an accident happens there is no need now to abandon the tap, as a plug from a disused tap can be substituted, or, by keeping a stock of additional plugs, a fresh one can be inserted at once without any bother, thus saving time, trouble, and money. It is claimed for taps of this description that they have a longer life than those made entirely of metal, and the stoneware plugs do not tear the metal barrel, but grind themselves in slowly as the tap wears, thus avoiding leaks.



## Oils, Paints, and Colours.

### FLOOR-CLOTH OILS.

[SPECIALLY CONTRIBUTED.]

In the manufacture of linoleum, floor oilcloths, and similar goods, and in the preparation of tarpaulins for wagons, etc., there is a good deal of oil and oil products used as a binding material, or as a water-proofing agent. The only oil which is used in these industries is linseed oil, and its value lies in the fact that when exposed to the air it absorbs oxygen and dries up into a hard, solid mass, of a resinous nature.

In this form it is known as "oxidised oil," and is produced by first boiling the oil with red lead, then pouring the boiled oil over a piece of thin canvas or "scrim," and hanging this oiled canvas in an airy drying-room at 90° to 100°F. When it is dry a further quantity of the oil is poured over the canvas, which is again allowed to dry, these operations being repeated until a mass of oxidised oil  $\frac{1}{8}$  to  $\frac{1}{4}$ -inch thick is obtained. The weight of the oxidised oil so obtained is about 10 per cent. more than that of the original, due to the absorption of oxygen. For the purpose of preparing linoleums this oxidised oil is ground up with kauri gum and resin to form a pasty cement, to which other ingredients in the shape of pigments are added, according to the particular kind of linoleum required. The oil is not fully oxidised, for further oxidation takes place when the oil is made into floorcloth, and so a hard, but elastic mass is obtained. Another method, which is largely adopted in making the compound which is spread over the canvas bottom of the cloth, is to boil the oil with acetate of lead, manganese oxide, and red lead or litharge, while sometimes dried sulphate of iron is used. The proportions of these driers vary with different makers who have each their own ideas on the subject, but the following may be taken as a guide:—For 450 gallons of oil, 33lbs. each of acetate of lead and dried copperas and 6lbs. manganese oxide are required. The length of time for boiling varies, but rather than raise the temperature unduly it is better to boil at a low heat for two or three days, with occasional stirring. By blowing air through, the time of boiling may be reduced fully one-half, while a rather better product is obtained. Oil prepared in this way will be solid, or nearly so, when cold.

There is, however, another form in which linseed oil is used in the manufacture of these articles, and that is in the preparation of the colour used in the printing of the design. For this purpose liquid boiled oils are used. These must have good drying properties, so that the cloth, after printing, can be rapidly dried off, otherwise when rolled up it would stick together.

Generally two qualities of such oils are prepared, one dark in colour, which is used for mixing with dark colours, such as blacks, browns, &c., and the other pale, for use with bright tints, chrome yellows, greens, reds, blues, &c. In preparing these oils it is usual to add litharge and manganese oxide as driers. The dark oil is prepared by boiling quickly at a strong heat, while in preparing the pale oil only a gentle heat is permissible. The quantity of driers used varies from 1  $\frac{1}{2}$  cwt. to 2 cwt. for 500 gallons of oil. The time of boiling ranges from six to eight hours. For preparing all these oils only the best linseed oil should be used, while it should, moreover, have been kept in stock for six months or so before using.

Oil is largely used in the manufacture of tarpaulin covers, and these are either yellow or black, though occasionally an exception may be met with. Such tarpaulins are made by hanging the canvas of which they are formed in a large, lofty room, then painting it with pale boiled oil, or in some cases a mixture of pale boiled oil and raw linseed oil. The object is to produce a coating which will be weatherproof for a reasonable time, and also be sufficiently elastic to stand being folded up and thrown about without cracking. Now raw linseed oil gives the most elastic coat, but it takes longer to dry than boiled oil, and consequently it is preferable to use a mixture of boiled and raw oil for this work. If the boiled oil contains too much of the driers it is liable to give a brittle coat, thereby reducing the wearing qualities of the tarpaulin very considerably. The black covers can be made by mixing the oil with some black pigment like lamp black; or a black varnish

may be made with the aid of asphaltum, stearine pitch, and similar products, and used along with the lamp black. Too much varnish, however, should not be used, or the coating will be very liable to crack, owing to brittleness. As several coats of oil are required, each coat must be allowed to become thoroughly dry before the succeeding ones are applied.

The oils used should, as before stated, be prepared from pure linseed oils; adulterated oils, and especially those containing resin oils, being avoided, otherwise there will be difficulty in getting the coating to dry properly. Baltic linseed oils always work the best. Where the tint is important the Hartley-Blenkinsop "pale" boiled oil may be employed with advantage. Ordinary boiled oils are brown in colour, and therefore will give rise to dark-coloured cloths; but this particular oil is even paler than the usual run of raw oils, and will make very light-coloured cloths.

### DRY SOAPS OR SOAP POWDERS.

[SPECIALLY CONTRIBUTED.]

One important branch of the soap trade of the present time is the manufacture of what are commonly known as "dry soaps." In the popular estimation these are, or at all events were at first, considered to be dried soaps, that is the ordinary soap dried and powdered. This, of course, they are not.

The writer does not know when or by whom this class of soap was first introduced, neither has he ever seen any historical account of them, but that they fill a want is testified by their sale. A few years ago there were only one or two makes, now there are many, nearly every soap maker preparing a dry soap as well as his ordinary kinds, while there are some who do nothing else. The number of fancy names under which they are sold to the public is legion. Some are of excellent quality, while others are but indifferent. The great bulk of the dry soaps are really mixtures of ordinary hard soap, soda crystals, and soda ash, ground to a fine powder. Some contain Glauber's salt in place of the soda crystals. Others contain a little paraffin wax or borax. The price at which they are sold, however, does not permit very expensive materials being employed in their preparation. Different makers mostly hold opinions of their own upon the best methods of making their soaps, but the *crux* is to get them into as fine a powder as possible.

A very good plan is to throw into the pan of an edge runner mill the required amount of soda crystals, soda ash, and soap, and give them a preliminary grinding and mixing, but care must be taken not to continue the grinding too long or the soap will begin to grow pasty. From the edge runner mill the materials are transferred to a disintegrator, in which they are ground to an impalpable powder. The "Devil" disintegrator seems to be well adapted for the grinding of dry soap, as the action is so rapid that the soap has no time to get hot and therefore liable to become pasty, as is the case with some other forms of grinding mills.

The following is an analysis of a well-known make:—Water, 47.85%; soap, 19.25%; sodium carbonate, 32.90%. This soap can be made by taking 25lbs. of a good soap made from tallow and cottonseed oil, and grinding it with 75lbs. of soda crystals. Sometimes such a mixture is apt to work pasty in grinding, especially if the soap be soft. This can be remedied by throwing in a little ammonia-soda.

Another soap contains:—Water, 48.36%; soap, 5.00%; sodium carbonate, 46.64%. This soap is made by taking 6 to 7 lbs. of a good soap, adding 5 lbs. ammonia-soda and 88 lbs. of soda crystals, and grinding them together.

The following is a common make of dry soap:—Water, 50.28%; soap, 7.69%; sodium carbonate, 22.01%; sodium sulphate, 20.02%. This is made by taking 9 lbs. of soap, 46 lbs. soda crystals, and 45 lbs. Glauber's salts, and grinding them all together, adding a little ammonia-soda if required, to keep the material from going pasty.

When paraffin wax is added much the same formula is used, only about  $\frac{1}{2}$ lb. of low grade paraffin wax or scale per cwt. of the soap is thrown in and ground up along with the other ingredients.

In place of soda crystals, ammonia soda may be entirely employed, adding an equal weight of water during the grinding.



Now a few words as to the stock soap which is used in making these dry soaps. Much of the lathering qualities of the powder depend on the quality of the soap used. An excellent soap can be made from bleached palm oil, cotton-seed oil, linseed oil and palm kernel oil. This gives a soap which lathers freely. Another good soap for this purpose can be made from tallow, cotton-seed oil, and coco-nut oil. Whether it is made by the hot or cold process is immaterial; neither is it needful to salt out, for when well made the soap can be used just as it comes from the pan. Should such a soap show signs of going more pasty in grinding than an ordinary finished, hard soap, the quantity of soda crystals should be reduced, and the quantity made up with soda ash, or 58 per cent. alkali. Some makers of these dry soaps have used oatmeal, but with what object it is difficult to say.

#### THE DEVELOPMENT OF PAINT MACHINERY.

[SPECIALLY CONTRIBUTED.]

It is within the recollection of the "oldest" artisan in the paint and colour trades that there was a time when every painter had to prepare his own colours and his own paints as he wanted them. The use of machinery was unknown, and the production of ready-mixed paints, to be bought at a colour-shop at 4d. a pound, was also unknown. Things have changed since then, and the use of paint has greatly increased, this increase of itself necessitating the employment of new and more expeditious methods of production.

In old times the painter used what was known as the slab and muller for preparing or mixing his paints, or he may occasionally have made use of the chemist's mortar and pestle. The slab was of smooth marble or stone, and the muller a rounded piece of hard stone. The material was spread on the slab, and worked under the muller until sufficiently well ground and mixed. This work was commonly entrusted to the youngest apprentice, who must often have found it not only a laborious, but a monotonous task. There is no doubt that in many cases a supply sufficient to last some time would be made, and probably in this way the custom of preparing white lead and other pigment colours in a paste form with oil arose.

The art of house painting and decorating has grown very extensively during the last quarter of a century, and consequently has greatly increased the demand for pigments and paints, and it is now quite beyond the power of manual labour to produce them fast enough. No wonder, then, that mechanical assistance has been called in, and that a new trade has arisen in the production of machinery for paint and colour making, to which many well-known firms now exclusively devote themselves, expending both time and skill in perfecting the machinery they make.

The two earliest machines to be applied to colour grinding were the edge runner and the flat stone mill. Edge runners are now made by a great number of engineering firms for a variety of purposes. They can be had in different sizes, and will be found very useful in the preliminary grinding of earth pigments. One firm has lately constructed a levigating mill, which consists essentially of a pair of edge runners working in a circular tank through which a stream of water can be made to flow. The edge runner mill is also found extremely useful for mixing such products as putty, &c.

The flat stone mill is even a greater favourite with colour, &c., grinders. The general form is that of a horizontal fixed stone, with a conical feed hole in its centre. Against and below this is another stone which is rapidly revolved, the grinding effect being increased by corrugating the grinding surfaces in a special way. In America these mills are largely used, and they there employ a system of surrounding the fixed stone with a water jacket so that it can be kept cool. The old forms of grinding mills have been much improved by modern colour mill engineers, who have increased their efficiency by attention to the details of construction.

The development of the use of machinery in any trade generally leads to the introduction of entirely new types of machinery. This has been the case with paint and colour machinery, in reference to which the records of the Patent Office are full of crude ideas. It will prove extremely interesting for anyone engaged in this industry to spend a few hours in going through the old patents and examine the ideas which are to be found therein. Such an examination could not fail to

be profitable, while it would also prove to be not devoid of humour on account of the many very primitive ideas which have been sanctified by being patented. One of the early inventors in this field tried to adapt mechanical power to the old slab and muller, and, needless to say, failed. Another inventor—we forget his name—taking an idea from his mother's rolling pin and paste board, proposed a machine in which the material to be ground is spread on a slab, over which a heavy roller is pushed backwards and forwards; this, however, was not a practical success. A slight improvement on this consisted in making the roller to work in a groove in a piece of stone, the material being fed between the two; this did not prove very successful, but this patent contained the germ which later on was developed into the roller grinding mill of the present day.

The first patent for these mills stands in the name of Geyelin, but their invention is popularly ascribed to Henry Clark. While Geyelin's mill was very complete and embodied a good many features present in roller mills of more modern construction, yet experience has shown up weakest points which have, from time to time, been remedied by one or two engineering firms, who have thereby prominently associated themselves with these mills, which are now indispensable in every colour and paint works.

The introduction of grinding mills has resulted in teaching the painter one thing, and that is, he cannot have his colours too finely ground. Then, again, he wants his materials well mixed. In consequence new types of colour mills, mixers, and sifters, undreamt of in the old days, have been brought out and developed almost to perfection, for now the materials can be turned haphazard into the hopper of a machine, which then proceeds to sift the fine particles from the coarse, removing the latter, while the former are passed on to be well mixed and finally sent out in perfect condition for the painter's use.

In a similar way the rapid developments in the manufacture of "ready-mixed" paints have necessitated the introduction of new machines. It is to American ingenuity that we are indebted for an efficient form of paint-mixer, which has been received with favour in this country.

There is another form of paint mill—the cone mill—that is to be seen in every paint and colour works and in most paint and colour shops. The form of this mill recalls the mortar and pestle of the druggist, and it may be that it is a mechanical development of the same, only the mortar is made in two pieces. The top portion is fixed and forms a hopper to hold the material which is being ground, while the lower portion plays the part of the pestle, and is made to revolve. The surfaces where the two portions come in contact form the grinding faces, between which the material is ground while passing from the hopper to the outside of the mill. There is not a more efficient paint-grinding mill than the cone mill, whether it be built for dealing with small or large quantities; for dry, friable powders, or for pasty materials.

We have so far mainly devoted our attention to the growth of paint-making machinery, but we might also have said much on the development which has concurrently taken place in the use of machinery for pigment making. The quantity of material now required makes it impossible to adhere to the old-fashioned methods of filtering, levigating, and drying. Consequently, we find that filter presses have become part of the plant of a colour works, while drying machines are now made that are capable of doing in hours what the old methods could only achieve in days. Then, again, for dealing with such minerals as china clay, ochres, etc., levigating mills are now made that will turn out a greatly increased yield of finished material from the crude ore than was formerly the case.

Here reference must be made to those types of pulverising mills or disintegrators in which genuine *grinding* action is obtained by bringing the material between two interlocking teeth projecting from two rapidly-rotating discs moving in opposite directions. The teeth exercise a cutting as well as a crushing action as they rotate, so that these mills are capable of dealing with very tough materials, and will reduce them to a very fine powder. In many directions these mills have been found extremely useful for doing perfectly work that at one time could only be done very imperfectly.



## CHEMICAL DETERGENTS.

In view of the important part played by detergents in the textile, laundry, and kindred industries, we think it may be of interest to mention that Messrs. Joseph Crosfield and Son have laid themselves out specially to supply detergents to suit the finest as well as the coarsest and dirtiest articles, from the finest cambric and silk to greasy cotton waste.

The new specialities prepared by them for laundries, for scouring, dyeing, and bleaching in similar trades, apart from soap, since we last drew attention to the developments this firm is achieving, consist mainly, first, in the production of a remarkably cheap Brown Oil Soap, free from rosin and silicate of soda; secondly, in the production of a special Bleachers' Soap; thirdly, in an absolutely pure Caustic Soda Liquor. As this Liquor is manufactured at a price comparing favourably with 70° caustic, all users of Caustic Soda in the neighbourhood of this firm should welcome a product which combines the advantages of being as pure a caustic as 77° Caustic Soda with the cheapness of 70°. This liquor is brought as near to the solidifying point of sodium hydrate as possible, viz., 110° Tw., at which strength the liquor contains 52% of hydrate (NaOH). It is well settled at this strength, thereby becoming as free from carbonate of soda and other salts as it is ever possible to obtain in a caustic soda.

Carbonate of soda is nearly insoluble in a solution of this strength, and the strength of the liquid is therefore an absolute guarantee of its purity, requiring no testing, which, to such manufacturers who have no trained chemists or who have no time for testing this product, should be a matter of some importance. The great advantages accruing from the use of this Caustic Liquor are sufficiently conspicuous, so that we hardly need enumerate them. Small or large quantities can be used with practically no trouble. No drums need be broken. A small quantity can be used without breaking up and damaging a larger quantity. No dissolving is required. Steam and labour are unnecessary. Purity, and absolutely constant composition are ensured, which hitherto could only be said of the purest solid caustic.

The package is not destroyed, as the same drums are used over and over again, the drums forming in themselves store tanks. They can be supplied with a tap, and quantities taken out as required. There is one disadvantage, however, which we must point out, and which in some cases will outweigh all advantages enumerated, and that is the higher cost of carriage when compared with solid caustic. This is, of course, an easy matter of calculation, but it will prevent this firm from doing an export trade in this article. As an offset to this drawback, the firm have increased their plant for fusing down this liquor to solid 77% caustic.

In regard to their Silicate of Soda, the firm have, since our last article, developed a considerable trade in a solution of alkaline silicate of soda, evaporated down to 180° Tw.

This process is covered by a patent, so that they are the only firm who are able to produce this article.

Users of silicate of soda solutions find themselves compelled to choose between buying this substance in solution or in form of glass. The former exposes the packages, especially in a hot climate, to liability of leakage. It also necessitates expensive package, and entails a relatively high cost of freight. The use of glass, on the other hand, while obviating these disadvantages, requires an expensive plant for dissolving it, for it is well known that silicate of soda in the form of glass is an exceedingly difficult substance to dissolve, which can only be done by prolonged agitation with steam at high pressure.

The truth of this statement can be proved by referring to the detailed account of the process of manufacturing high grade silicate of soda which was published in the *Journal* in 1893 (No. 296, p. 37). We then gave a full description of the best method of procedure and the necessary plant for effecting the solution of the alkaline silicate. Reference to this article will emphatically confirm our point.

Messrs. Joseph Crosfield & Son's firm, we think, have hit on a lucky way out of this difficulty by preparing a silicate of soda solution which is evaporated until it is practically solid, having a specific gravity of 1.9 or 180° Tw. This substance has already been taken up by many users in hot countries, and is destined to largely supersede all other grades of silicate of soda.



AT the time when we first instituted a collection of short biographies of the more prominent men in the scientific and technical world as a feature of our Annual Special Issue, we expected that some years would prove very barren. Unfortunately, so far, this has not been the case, and the past year was no exception. The technical world has suffered both in the number and the quality of its losses, and the scientific world in quality in particular. It is not a very difficult task to make a commencement, seeing that it is little better than six months since the death of

T. H. HUXLEY,  
Ætat 70.

The Right Honourable Thomas Henry Huxley, was born at Ealing, where his father was a master in a semi-public school. His educational progress was largely the result of his own efforts, and at an early period he had made himself sufficiently familiar with German to dive deeply into Teutonic scientific literature. Of childhood anecdotes there are few, the most amusing, perhaps, being the incident in which he preached a sermon in imitation of the vicar, for the benefit, or rather delectation of his mother's servants. The whole of the regular school training that he received was obtained at his birthplace. In 1842, he entered the Charing Cross Hospital as a medical student. Mr. Wharton Jones, the eminent oculist, was at that time lecturer in physiology at Charing Cross, and from him the ardent young student received much encouragement. The extent and precision of the teacher's knowledge and the severe exactness of his method of lecturing were most impressive, and Huxley worked hard to obtain his approbation. Under his influence was published in the *Medical Gazette* of 1845, Huxley's first investigation into the minute structure of human hair, a part of the sheath of which, then described for the first time, is still known as "Huxley's layer." Having entered the naval medical service, he was appointed in 1846 to the *Victory* for hospital service at Haslar, but did not long remain in this position, for he was shortly offered by the influence of Sir John Richardson, the Arctic explorer and naturalist, the appointment of assistant surgeon on board Her Majesty's ship *Rattlesnake*, then being equipped under Captain Owen Stanley for an exploring cruise to the South Seas. This voyage afforded the young naturalist unlimited opportunities for studying marine life, of which he was not slow to avail himself. Several memoirs of first-rate importance were the result of these investigations, and on his return an effort was made on the part of several scientific men to induce the Admiralty to publish them in a suitable form, as a recognition of their merit, and to act up to the spirit of a pledge they had given to encourage officers to undertake scientific work. These negotiations were not completed when Huxley retired from the service, and thereafter his memoir on the "Oceanic Hydrozoa" was published by the Ray Society, with a characteristic preface illustrating the encouragement offered by the Admiralty to its officers to further the progress of natural history. Other results of this voyage were papers on the *Medusa*, on the anatomy of the *Cephalous Mollusca*, and on the *Radiolaria*, which secured his election to the Royal Society at the early age of twenty-six, and also gained for him the award of a Royal medal.

Space will not permit of anything like a summary of the many exciting episodes of his able championship of Darwin's theory. The following incident, however, is too good to be passed over, while it also serves as a specimen of his ability as a controversialist. The discussion of Darwin's "Origin of Species," at the British Association meeting, ultimately resolved itself into a wordy duel between Huxley and Bishop Wilberforce. In the heat of their encounter the Bishop



so far forgot himself as to press the matter to the verge of personality by asking "whether Huxley was related by his grandfather's or grandmother's side to an ape?" This called forth the rejoinder: "I asserted, and I repeat, that a man has no reason to be ashamed of having an ape for his grandfather. If there were an ancestor whom I should feel shame in recalling, it would be a *man*, a man of restless and versatile intellect, who, not content with an equivocal success in his own sphere of activity, plunges into scientific questions with which he has no real acquaintance, only to obscure them by an aimless rhetoric, and distract the attention of his hearers from the real point at issue by eloquent digressions and skilled appeals to religious prejudice." A contemporary writer observes: "The retort was so justly deserved and so inimitable in its manner, that no one who was present can ever forget the impression that it made." It was one of Huxley's most admirable characteristics that he was always ready to take up the cudgels on behalf of any cause which he believed to be right, at whatever risk of obloquy and unpopularity; thus we find him at the Geological Society in 1862 supporting Ramsay's newly advanced theory of the excavation of lake basins, when it was received with coolness or opposition by men so eminent as Lyell and Falconer. In the same spirit he carried the doctrine of evolution to its extreme logical limits, and lost no opportunity of expounding his views. His addresses on "Man's Place in Nature," and on "The Physical Basis of Life" in particular, roused a storm of discussion. Respecting the latter, he says it "was intended to contain a plain and untechnical statement of modern biological thought, accompanied by a protest from the philosophical side against what is commonly called 'materialism.' The result of my well-meant efforts I find to be that I am generally credited with having invented 'protoplasm' in the interests of 'materialism.' My unlucky lay sermon has been attacked by microscopists ignorant alike of biology and philosophy; by philosophers not very learned in either biology or microscopy; by clergymen of several denominations; and by some few writers who have taken the trouble to understand the subject."

Great as were his contributions to the progress of science, it was not these that earned for him widespread notoriety and popularity, and rendered his name a household word, so much as the ability and clearness with which he expounded the results of science for the benefit of the untechnical public. In this department it is not too much to say that he has never been surpassed, and rarely equalled. His spoken lectures were models of pellucid exposition; his intellectual perception of his subject seemed so clear that he had only to put it into words to make every point obvious to his audience; whilst his remarks were from time to time lighted up by those flashes of humour without which no popular address can be regarded as an unqualified success. The discourse to working men on "a piece of chalk" may be cited as a striking example of his powers in this direction. "Have you understood the lecture?" he asked one day of a student. "Yes, sir, all except one or two passages, when you happened to stand between me and the blackboard." "Ah, well, you see, I do my best to be clear, but I cannot be transparent," was the ready answer. As an essayist Huxley was no less conspicuous than as a lecturer, and the charm of his style would give his writings a high position in English literature, apart altogether from the interest of the topics of which they treat.

Though at times his faithful advocacy of the Darwinian theory led him into error, his mistakes were few, and compared with his marked

successes, insignificant. The motives and aims which actuated him are clearly shown by his own introductory words to his collected essays. While expressing doubts as to the worthiness of his life's work, he says, "But if I may speak of the objects I have had more or less definitely in view since I began the ascent of my hillock, they are briefly these:—To promote the increase of natural knowledge, and to forward the application of scientific methods of investigation to all the problems of life, to the best of my ability, in the conviction, which has grown with my growth, and strengthened with my strength, that there is no alleviation for the sufferings of mankind except veracity of thought and of action, and the resolute facing of the world as it is when the garment of make-believe by which pious hands have hidden its uglier features is stripped off."

Herein we obtain the key note to his actions and writings, and very little consideration will show how great his loss is, not only to the scientific world, but also the world in general, since it would be difficult to find many men who have so honestly and consistently adhered to their convictions, be they what they may. A lover of truth, he sought it ardently, and who knows but what he found it?

#### L. PASTEUR.

Ætät 73.

By the death of Louis Pasteur, on September 28th, 1895, from paralysis, at Garches, near St. Cloud, chemistry, as well as the related sciences, have lost an able exponent. It is not generally known that it was only when well advanced in life that Pasteur devoted himself to his researches on inoculation. He was born on December 22nd, 1822, at Dôle, in the Jura, where his father was a working tanner, removing at a later date to Arbois. Here his talented son began his education, passing afterwards to Besançon, where he took his bachelor's degree and joined the teaching staff of the college. He next went to Paris, and turned his attention to scientific studies at the Collège St. Louis, taking his doctor's degree in 1847. After a short period of service as professor at Dôle he was called to Strasburg, where he became ultimately professor of chemistry and physics. In 1854 he organised, as dean, the new Faculty of Sciences at Lille. For the ten years from 1857 to 1867 he had the direction of the scientific studies at the Ecole Normale Supérieure of Paris. He held the chair of chemistry at the Sorbonne from 1867 to 1875. In 1868 the University of Bonn sent him the honorary degree of doctor of medicine, but on the outbreak of the war with Germany he sent back his diploma—a course which has been variously criticised. Many other distinctions awaited him. He was a Fellow of the Royal Society, and of many other learned bodies in his own and other countries. His early researches related to the polarisation of light. To these succeeded his investigations in fermentation, with their practical applications and accompanying controversies as to spontaneous generation. He also made a special study of the diseases by which the silkworm is attacked. The practical importance of his conclusions led the French Assembly to grant M. Pasteur a pension of 12,000 francs. To a later period belong his researches on virus. The results obtained at the "Institut Pasteur" have been a matter of keen controversy, in which M. Pasteur has been vigorously attacked, and has sometimes replied with a vivacity which he afterwards regretted. Among the foreign distinctions accorded to him were the Rumford, Copley, and Albert medals from England. He was appointed "secrétaire perpétuel" of the Académie des Sciences, but he found the duties uncongenial, and held the position for two years only.



T. H. HUXLEY.



## J. L. VON MEYER.

## Ætat 65.

Julius Lothar von Meyer, was born at Varel, in the Grand Duchy of Oldenburg, being the son of a then well-known physician, Dr. August Meyer. After completing his gymnasium course at Oldenburg, he began to study medicine at Zürich in 1851. Here he spent four semesters, followed by two semesters at Würzburg, where he received the degree of Doctor of Medicine in the spring of 1854, for a thesis on the question of the condition of gaseous combinations in the blood.

Meyer's tastes now led him away from medicine, and in the direction of pure chemistry, and especially toward physical chemistry. Leaving Bunsen, he went to the old university of Königsberg, attracted by the courses of lectures given by Franz Neumann on the subject of mathematical physics. In the spring of 1858, he went to Breslau, and was given the degree of Doctor of Philosophy for a dissertation on the absorption of carbon monoxide by the blood.

In 1859, he was given the position of Director of the Chemical Laboratory of the Physiological Institute. Here he remained until 1866, publishing in the interval a number of valuable papers, and the first edition of his famous work, "Die modernen Theorien der Chemie." In some of his earlier papers Meyer began the study of the relations existing between the atomic weights and physical and chemical properties of the elements. Their relations were soon formulated in his "Periodic System of the Elements."

It is true that Mendelejeff also arrived independently at almost similar conclusions, but this fact does not diminish the value of Meyer's work since his was likewise original.

Among the honours conferred on him were the Davy Medal of the Royal Society in 1882; the honorary membership of the Chemical Society the following year. Later he was made corresponding member of the Russian and also the Prussian Academy of Sciences.

In addition to the renown he so justly won, he was also a chemist possessing great manual dexterity, being unusually skillful as a glass blower. As a lecturer he was simple and explicit, while for a teacher of such eminence he was kindly and patient to a remarkable extent. By comparison there are few investigators of equal or even minor standing, who are in these days willing to give as much time from private work as he freely gave to interested students.

## H. B. NASON.

## Ætat 64.

Henry Bradford Nason, who died in January last, was professor of chemistry and natural science at the Rensselaer Polytechnic Institute, N. Y. He was born at Foxborough, Mass. His early training was received at Newburyport, afterwards attending the Academy at Bridgewater, and finally graduating at Amherst College in 1855. He then proceeded *via* London, Holland, and Belgium, to Göttingen, where the same year he was matriculated as a student of philosophy.

While connected with the university he devoted his time to chemistry, mineralogy, and geology, and attended lectures on physics and botany, graduating in the summer of 1857. He spent a short time at Heidelberg and Freiburg, and then visited Berlin, Paris, and London. He spent the winter of 1857-58 in teaching at the Raymond Collegiate Institute, Carmel, Putnam County, N. Y. In April, 1858, he was appointed professor of natural history in the Rensselaer Polytechnic Institute. In the summer he declined an appointment as professor of chemistry and natural science in Oahu College, Hawaiian Islands. He accepted an appointment to the same chair in Beloit College, Wisconsin, in September, 1858, and spent a part of each year there, the remainder of the time at Troy, until 1866, when he resigned the position at Beloit to accept the professorship of chemistry and natural science at the institute, which position he held until his death.

In addition to a number of minor works, he translated and revised several important German works on mineral and blow-pipe analysis. Besides being a member of many American literary, scientific, and social clubs and societies, he was also a Fellow of the Chemical Society, and a member of the Society of Chemical Industry.

## G. KRÜSS.

## Ætat 35.

The death of Gerhard Krüss at such an early age was the unfortunate means of cutting short a career as full of promise as it had so far been brilliant and fruitful. His father was a well-known optician at Hamburg. At the age of twenty he went to the Munich University, studying chemistry under Boeyer and Zimmermann. Two years later he spent a summer session under Bunsen at Heidelberg.

His early acquaintance with physical instruments, particularly the spectroscope, led him to begin a series of investigations in the field of spectroscopic chemical analysis. His first paper described a spectroscopic method of ascertaining whether two coloured solutions on mixing, reacted chemically or merely mixed. In subsequent papers he proved by experimenting on the absorption bands of indigo and fluorescein and their derivatives that the substitution of methyl, oxymethyl, ethyl, or bromine for an atom of hydrogen, moved the absorption spectra towards the red, while the introduction of an nitro group or an amido group, produced just the opposite effect.

Krüss saw and clearly described the practical bearing of these discoveries, and, as a result, the spectroscope is now employed at Höchst, both for the examination of the purity of known dyes, and as a guide to the production of new ones.

His first strictly chemical researches were taken up under the able guidance of Clemens Zimmermann, at whose suggestion he undertook the investigation of the sulphur compounds of molybdenum.

After the death of Zimmermann (March, 1885) Krüss turned his attention to the study of the compounds of gold. In these investigations, which extended from 1886 to 1893, he corrected the older statements concerning the gold oxides, showing that only  $Au_2O$ ,  $Au_2O_2$ , and  $Au_2O_3$  exist, redetermined the atomic weight of the element, measured the spark spectrum given by a neutral solution of gold chloride, and, partly in connection with his students, investigated the compounds of gold with the halogens and with sulphur.

One of the greatest services that he rendered to inorganic chemistry was the founding of the *Zeitschrift für Anorganische Chemie*, which he also edited successfully. In three years it fully justified its establishment.

The latter part of Krüss's work lay chiefly in the obscure and difficult field of the rare earths, to which he first devoted attention in conjunction with Nilson in 1886, but these researches are too numerous to admit of detailed mention here. Besides critically studying the characteristics of the different "earths," he greatly developed the methods of separation and examination of these allied elements. Among the many other admirable papers which appeared, there may also be mentioned that with Morahut upon glucinum, with Ohnmais upon the sulpho-salts of vanadium, and with Thiele upon the condition of iodine in solution and the probable cause of the differences in colour of its solutions.

## H. D. POCHIN.

## Ætat 71.

The name of H. D. Pochin is one that will need no introduction to the chemical trade, from which, by his death on October 28, 1895, at Bodnant Hall, near Bettys-y-Coed, an interesting and long-known member has been removed.

Mr. Pochin was a native of Leicester, and on leaving school was apprenticed to a local chemist and druggist. Subsequently settling in Manchester, he took a position in the establishment of Mr. James Woolley (now James Woolley, Sons, and Co.). On the failure in health of Mr. Halliday, of the firm of Halliday and Co. (in which Mr. Woolley was a partner), chemical manufacturers, Quay-street, Salford, Mr. Pochin became the manager of the works, afterwards conducted under the firm of Pochin and Woolley. As the result of his discovery of the decomposition of China clay by sulphuric acid, which was patented, they entered on the manufacture of aluminous cake on an extensive scale at Newton Heath. Shortly after the passing of the Limited Liability Act of 1855, Mr. David Chadwick, with Mr. Pochin and other friends, formed a syndicate for the conversion of several large concerns from private ownership into public companies. The



transaction proved highly remunerative, and Mr. Pochin rapidly realised a fortune.

Another important process he worked out was the purification of resin by means of distillation. Before he set to work on the task it was believed that resin could not be distilled without decomposition, but he found that if it was heated to 400° F., and steam was blown through it, it would distil undecomposed and free from colour. Resin refined by this process is now very largely used in the manufacture of pale yellow soaps, and is the foundation of almost all fancy soaps. Pochin is said to have sold his patent to a large soap manufacturer for about £50,000. He was deputy chairman of Bolckow, Vaughan, and Co., Ltd., of John Brown and Co., Ltd., and of the Metropolitan Railway.

For several years Mr. Pochin lived at Barn Elms, Surrey, but about 1880 he bought an estate on the river Conway, and there built his house of Bodnant Hall, where he continued to live up to the time of his death.

#### J. LEATHART.

*Ætat 75.*

The death of James Leathart, took place on the 9th August, 1895, at his residence, Bracken Dene, Saltwell, Gateshead-on-Tyne. The deceased gentleman, who was the son of Mr. John Leathart, mining engineer, Alston, was born on the 25th November, 1820.

In 1836 he came to Newcastle, and joined the firm of Locke, Blackett, and Co., lead manufacturers. He soon became managing partner of this firm, and under his direction, Locke, Blackett, and Co. greatly extended both their business and their works, by erecting large smelting and desilverizing works at St. Anthony's, in 1865, in addition to their white, red, and sheet lead works.

On the conversion of the firm into a limited liability company in 1891, Mr. Leathart became managing director, retaining this position until his death. He was also a director of the Tyne Steam Shipping Co., Ltd., and of Wm. Cleland and Co., Ltd.

Several years ago he was appointed a justice of the peace for Gateshead, and afterwards he took a seat on the bench for the county of Durham.

He had a strong love of art, and for many years he was on terms of intimate friendship with many of the pre-Raphaelite Brotherhood. He possessed one of the finest collections of paintings in the North, containing well-known examples from the brush of Dante Gabriel Rossetti, Ford Madox Brown, Sir E. Burne Jones, Wm. Holman Hunt, Albert Moore, Arthur Hughes, Wm. Davis, Mark Anthony, W. B. Scott, etc.

#### W. C. DEELEY.

*Ætat 61.*

The death of William Clarke Deely, on the 4th June last, came as a surprise to most of those who knew him, as he was a man of robust frame, who being laid up by an attack of pneumonia, despite a rally, suddenly succumbed to a relapse. He was a native of Warwickshire, and went to Chester from Liverpool in 1869, to take over a small concern, known as the Dee Mineral Oil Co. Prior to this he had managed the copper works at Padeswood, Flintshire. At the Dee Mineral Oil Co. he was subsequently joined by Mr. Chas. Homfrey, and later on by Mr. John Thompson about the year 1873, the company being known as the Dee Oil Co., Saltney. The concern was converted some five years ago into a limited liability company, with Mr. Deeley as manager, but his connection with it terminated two years or so prior to his death.

He was an ardent member of the Town Council, at the meetings of which his fearlessness and acuteness, and his technical knowledge and varied experience gave him a commanding position in debate.

#### H. FLETCHER.

*Ætat 53.*

Herbert Fletcher was born at Bolton, April 25, 1842, and educated at Windermere Grammar School. He studied mechanical engineering with Messrs. Hick, Hargraves and Co., at Soho Works, Bolton, and surveying under Mr. Ellis Dorning, of Manchester. Later he managed the Clifton and Kearsley Collieries, near Manchester, for his father (he late Mr. John Fletcher, D.L.), and was owner of the Ladyshore

Colliery, near Bolton. For a time he acted as consulting engineer to the Atherton Collieries, near Bolton, and up to his death was mineral adviser to the Duke of Buccleuch at Burnley. Besides designing many practical improvements in small appliances for coal pits, he adopted the method now used at Ladyshore Colliery of filling up the goaf, as the coal was extracted, with material from all parts of the mines, instead of sending the latter to bank; and brought down the pit for that purpose cinders and other available refuse. In this way the weight is taken as it comes on, avoiding falls at the face, better than by props and chocks, and still better to leaving no space for the accumulation of gas. For the last 15 years of his life he worked hard to abate the nuisance of smoke arising from boiler fires. He adopted a mechanical furnace of the coking type, and for many years his chimneys have been practically smokeless, while steam has been raised with the maximum of economy from the colliery refuse, for which no reasonable price could be obtained. In these furnaces he made many improvements. During the last few years he devoted his whole interest and energy to the general question of smoke abatement, and spent much time in collecting information for a report to the Smoke Abatement Society, with the object of showing conclusively the merits of the different methods of boiler firing, and proving that the mechanical furnace was the most economical in utilisation of both fuel and boiler space, and that the furnace which made the least smoke was financially the most economical. For nearly ten years he was a member of the Bolton Town Council, and was also a member of the Lancashire County Council. His death occurred suddenly at his colliery near Bolton, from failure of the heart, on September 16th, 1895. He was well known throughout Lancashire, and his death will be regretted by all engaged in the solution of the vexed question of smoke prevention. As a member of the Sanitary Association he never lost an opportunity of urging his views on the smoke question. During the great coal dispute Mr. Fletcher was one of the few employers who conceded the demands of the Federation, and commenced working his pits some time before the dispute was settled.

#### R. BELL.

*Ætat 71.*

Robert Bell was born at Wishaw on December 4, 1824. He developed into a man of energy and enterprise, and first met success as a coalmaster. In 1851 he leased a coalfield on the Wishaw estate of Lord Belhaven, and later he took other fields on the same estate, and before long became one of the leading coalmasters of the district. In 1860 he erected the Wishaw blast furnaces, and worked them for some time; but this undertaking ended in failure, and the plant was eventually sold to the Glasgow Iron Company. He had brick works going in Wishaw for many years, and also steel nail works. In 1866 he purchased the estate of Glen Helens, in the Isle of Man, and on it he opened slate quarries. In 1879 he commenced to work canal coal and limestone mines in the parish of Muirkirk; in 1885 he took a leading part in starting the Belhaven Iron and Steel Works, Wishaw; and in 1887 he opened quarries for building stone near Linlithgow. He was a shrew business man; but, having a very sanguine temperament, he sometimes launched out into undertakings from which he got no personal recompense. He was best known, however, in connection with the shale and paraffin oil industry. In 1858 Mr. Bell had taken a lease of the minerals on the Earl of Buchan's estate at Broxburn, parish of Uphall. He tried ironstone mining, but it did not succeed; and he from several pits supplied the neighbourhood with household coal, working the Houston seam at the very bottom of the coal measures. When the Boghead coal became exhausted, the shale was tried, and, although it gave only 30 gallons per ton, while the Boghead coal gave 100 to 120 gallons, its distillation was persevered in, with the result that Dr. Steel, Mr. Poynter, Mr. Fernie, and several others started works at Broxburn, getting shale from Mr. Bell. The Broxburn Oil Company, Limited, was floated in 1878, and took over Mr. Bell's lease of the minerals. Mr. Bell was always a director, and was for a long time chairman, taking an active interest in all that was done, though the management was shared with other first-rate men. The company was successful beyond all expectation, and Mr. Bell commenced to reap the just reward of his energy.

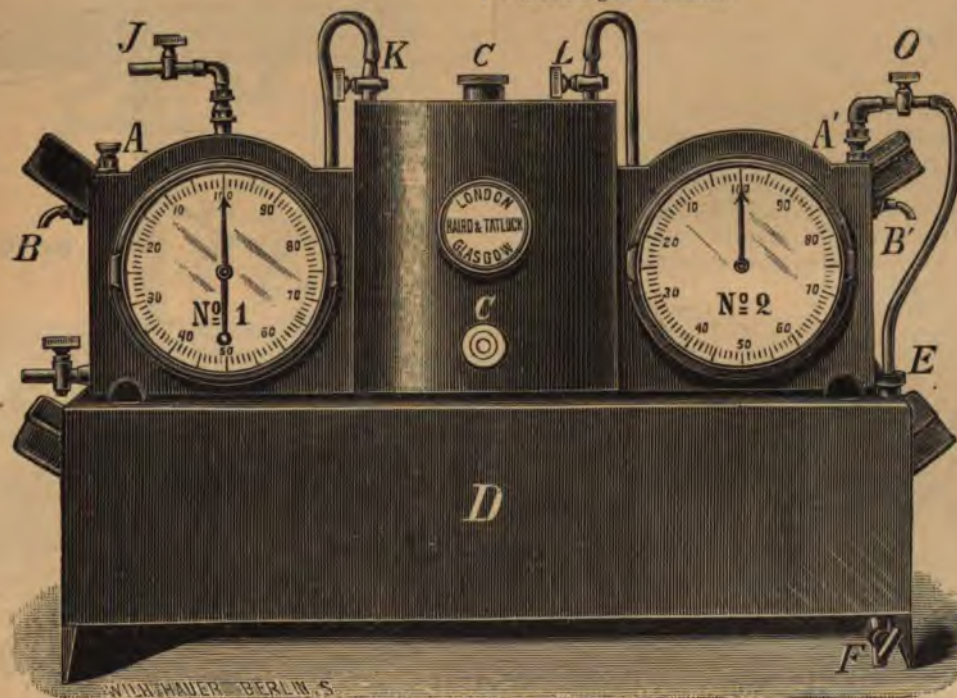


## Laboratory Hints and Appliances.

### CRAIG'S COMBUSTION TESTER.

LAST year in these columns we described an ingenious combustion tester based on physical principles, the agency for which, by the bye, is in the hands of Messrs. Meldrum Bros., of City-road, Manchester. The tester to which we now draw attention is based on the principle of chemical absorption. It is the patented invention of Mr. Geo. Craig, of Lugar Iron Works, Cammock, N.B., and is being introduced by Messrs. Baird and Tatlock, of 40, Renfrew-street, Glasgow (and London).

When any combustible is burned with the lowest possible excess of air, its maximum calorific intensity is obtained; and the "Combustion Tester" has been designed to ascertain the accomplishment of this object. It is simply an almost automatic apparatus that, with the minimum of trouble, indicates the percentage of carbonic acid in flue, chimney, or other gases in a few minutes. The greater the proportion of carbonic acid obtained, the more perfectly is the fuel or gas being burned.



Another field in which the instrument is of peculiar value is for regulating gas producers. The gas from these should contain as little carbonic acid as possible, and the apparatus indicates at once if the producers are being properly and economically worked. In iron and steel works, mills, and gas works, and for coke ovens, chemical works, engineering works, and ocean steamships the apparatus is simply invaluable, and large fuel economies may be effected by its use.

It is strongly made, and so simple as to require no skilled attention; the fireman or attendant can easily work it, and learn at any time how matters stand.

#### DIRECTIONS FOR USE.

(1.) The apparatus should be fixed as near the flue as is convenient and carefully levelled. At the same time it is advisable that the pipe connecting with the flue should be about ten feet long so as to thoroughly cool the gases prior to their entering the apparatus. (2.) The measuring compartments are filled with paraffin oil, or petroleum, through the plugs A and A' until overflowing at the side taps B and B'. (3.) The central chamber is filled with the "absorbent mixture" by the opening C, until within one inch from the top when levelled. (4.) C' serves to empty this chamber when it requires

refilling with fresh "absorbent mixture," which is known by the apparatus failing to record properly. (5.) All the openings should be tightly closed with their caps or plugs, using a little vaseline on the joints. (6.) The aspirator tank D is filled with cold water by unscrewing the cover E, connection being made thereafter with the stopcock O, as in figure. (7.) The stopcocks, J, K, L, and O, are opened, and a current of air is drawn through the apparatus by allowing a sufficient stream of water to run off by the stopcock F. The index hands revolve, and these are made to nearly synchronize by adding small quantities of paraffin oil to whichever side is going the slower, by means of the plugs A and A'. (8.) It is not worth while making them synchronize exactly, but it is essential to ascertain the exact relationship between the two recording meters. This is done by shutting the stopcock O when No. 1 hand arrives exactly at 100, putting the movable hand of No. 2 also at 100, and making, say, five complete revolutions of No. 1. No. 2 hand will have gone either more or less and, whatever it is, when divided by the number of revolutions, gives the *difference per revolution*. This requires to be subtracted from the carbonic acid found subsequently if No. 2 goes the slower, or added if No. 2 goes the faster.

#### DETERMINATION OF CARBONIC ACID.

The aspirator is set to work, and a few revolutions made to clear out the air in the apparatus. The stopcock O is shut when No. 1 hand is exactly at 100, and No. 2 hand is brought to 100 also. The stopcock O is then gently opened, and closed when No. 1 hand has made a complete revolution, which should occupy from two to three minutes; the position of No. 2 hand then indicates the percentage of carbonic acid in the gases.

#### CARBONIC ACID IN FLUE GASES.

The possible maximum of carbonic acid in flue gases when anthracitic or bituminous coal is being burned varies from 19 per cent. to 20 per cent., and is but little different for producer gas. Such proportions are never obtained in practice unless with coke ovens, in which the tightness of the building (a point of paramount importance) helps the result. With 10 per cent. only, it means that more than twice the amount of air necessary for combustion is being used, or that so much coal is being burned to heat up a lot of air that simply escapes by the chimney, hurting the draught at the same time. With producer and furnace gases 16 per cent. is easily obtained.

No hard-and-fast figures can be laid down, but such results ought to be striven for, and the settings repaired or pointed if necessary.



## A HANDY LABORATORY STILL.

The still illustrated below can be heated either by fire or gas, or directly by waste steam. The latter pattern is shown in Figs. 1 and 2. The idea has been made the subject of a patent by Messrs. Morris and Wethered. The apparatus consists of a pan or still A, enclosed by a steam-jacket B. The top of the still is closed by a cone, as shown, there being a channel G left between it and the top of the pan. Any liquid condensing in the cone trickles down into this channel, instead of falling back into the pan. This channel, it will be seen, is in communication with an inclined delivery pipe H, fitted with baffle-plates, as shown in Fig. 2. These baffle-plates retard the flow, and give time

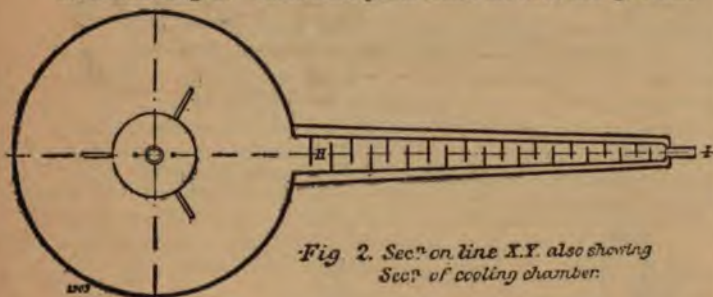


Fig. 2. Sec<sup>n</sup> on line X.Y. also showing Sec<sup>n</sup> of cooling chamber.

for the heat to be abstracted by the water circulating in the jacket K (Fig. 1). This jacket is divided into two parts connected by the pipe L, one part surrounding the delivery pipe and the other the top of the cone above the still. An outlet regulated by a suitable tap is provided at N. The still is provided with an automatic feeding device. It consists of a down pipe O, supported on a cage S. Inside this cage is a float R, on the top of which is a valve P, which, as the float rises,



closes the outlet from the down pipe. The output is said to be about six times that of ordinary stills, though only occupying one half the usual space. The still is being made by Messrs. Llewellyn and James, of Bristol, who are now making a special cheap still, producing  $5\frac{1}{2}$  pints per hour, for Laboratories, &c. The method of working is as follows:—Fix a rubber hose to the water inlet J (Fig. 1) from a water main or tank. On N connect a hose for outlet of waste water. Then

turn on regulating cock M and supply cock J. Open the manhole of still body and watch the rise of water until it reaches to the centre of

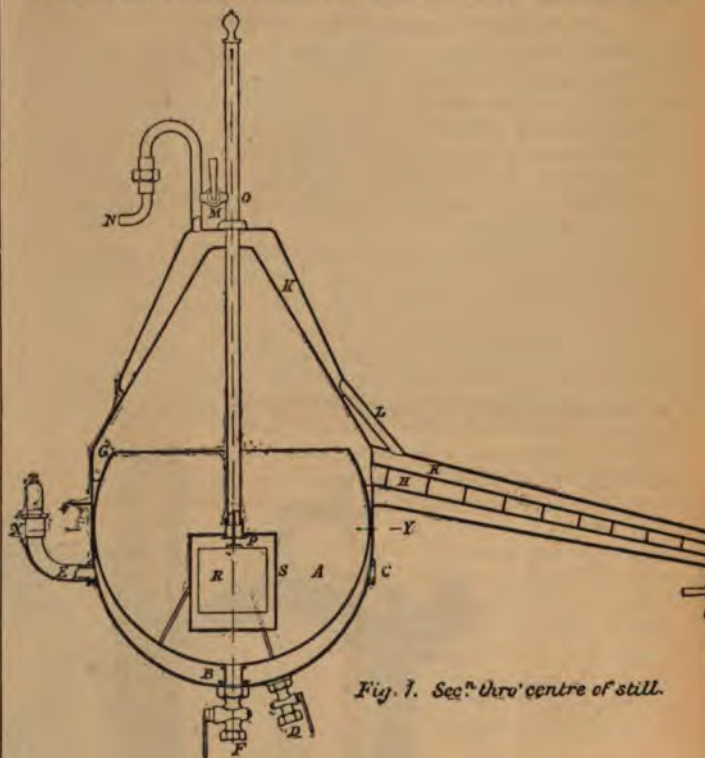
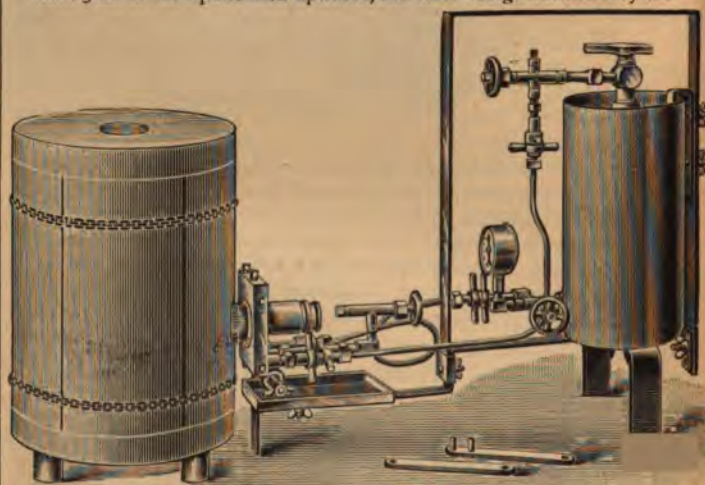


Fig. 1. Sec<sup>n</sup> thro' centre of still.

float inside the still. Turn off both cocks M and J and turn on steam, or light gas or fire as required. As soon as the water boils turn regulating cock M about one half turn; then regulate the inlet water at cock J to about one third turn. When distilling essences, the automatic feed can be at once turned off by the cock M.

## A PORTABLE BENZOLINE FURNACE.

The principle on which these furnaces are constructed is the continuous automatic distillation of benzoline under any desired pressure from 5 lbs. to the square inch upwards, the blast being unaffected by the



pressure. The furnace is independent of bellows, blower, pumps, or chimney. These advantages, combined with its economy and power, render it highly useful to metallurgists, chemists, and those requiring a portable but powerful source of heat, free from dust and smoke. The fuel is secured in strong steel cylinders, the tubes being of solid drawn copper. The furnace can be obtained in three sizes, from the makers, Messrs. Nelson and Sons, Sherland Works, Twickenham, London, S.W.



### KUHLMANN'S BALANCE MIRROR INDICATOR.

Acting upon a suggestion thrown out by Prof. Ladenburg, Herr Kuhlmann has constructed a quick reading balance, in which the fractions of milligrammes are indicated by the deflection of the pointer from the vertical. These balances have the centre of gravity very low, and are consequently equally sensitive under every weight, and the oscillations are more constant. They are so adjusted that the balance is turned  $2^\circ$  by an overweight of 1 mg., and the pointer is moved 2 mm. on the scale. These 2 mm. are divided into 10 parts, and are observed through a small telescope, so that, assisted by its magnifying power, the deci-mgs. are readily read off, and centi-mgs. can be approximately judged. The telescope is fixed outside the case to the front frame, and is easily removable. The increased speed with which an exact weighing can be taken by an instrument of this construction will be appreciated. The balance makes the double oscillation in 6 to 12 seconds according to the weight it carries, no weights below decigrammes are used; the rider gives centigs. and milligs., and the decimilligs. are read off the scale by the oscillation of the pointer.



In our illustration, however, we show a still more simple contrivance, by means of which the decimilligrammes are read, the efficiency of which can be tested by actual trial at Messrs. F. Jackson and Company's showrooms, Manchester, where telescopic and mirror reading balances, as well as Kuhlmann's other precision balances can be seen.

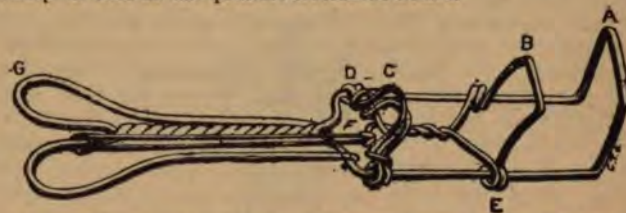
A concave cylindrical mirror is attached to the central pillar of the balance, so that it can be moved in all directions, reflecting the scale, which is engraved on the back of the ivory plate. The pointer swings behind, but close to the latter, and to avoid seeing the same and its reflection it is split lengthways above the end, and the two halves are bent to a rectangular frame ending in a fine point. By observing the reflection of the scale, the fine point appears to pass rapidly over the divisions, and the degrees of the oscillation are easily counted.

This arrangement has great advantages over the Telescope reading, in so far as it is more convenient and does not require so strong an illumination. The pointer is protected by the scale plate, and the front slide of the balance is relieved of the telescope.

### A UNIVERSAL HAND-CLAMP.

From personal experience we are as a rule inclined to think that the handiest clamp for test tubes and light flasks, needing intermittent heating, is no clamp at all—or in other words the fingers pure and simple. Spring clips are always either too strong or too weak, while those depending on the fingers for pressure are more cramping than the humble but efficient band of folded paper. Our illustration, however, shows a fairly satisfactory combination of the requisite attributes,

of a successful universal hand-clamp. It has been devised by Dr. Austen and Mr. W. A. Horton of the Brooklyn Polytechnic Institute, New York, and is made by Messrs. Ermei and Amend of that city. The clutch B slides on the parallel bars E, and is slightly smaller than the counter-clutch A. This, with its curvature, allows it to grasp any object, no matter how small, that is placed between B and A. A double bearing, to insure ease of movement, is effected by winding the wire at D. The rubber strap F brings the travelling clutch back and opens the clamp as soon as the pressure is removed from C.



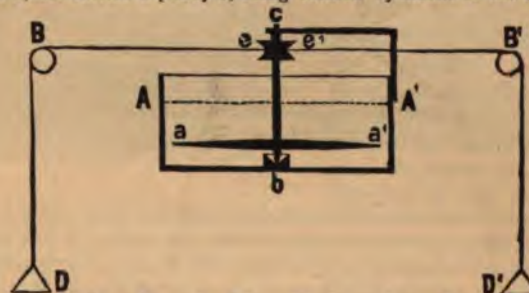
To use the apparatus, the handle is securely grasped, and the end of the thumb is placed against C. On straightening the thumb, in the manner of a knee-joint, the object is tightly held between the clutches. The hand does not tire on continued holding, because the pressure is taken in straight line on the bones of the thumb, and hence calls for so slight a muscular action as to be practically inappreciable.

### THE WEISS CONSISTIMETER.

In a sense this apparatus is a very delicate viscosimeter, but is applicable to the determination of the consistency of a wider range of materials than the customary types of viscosimeters. The principle can be gathered from the sectional diagram, while the other cut repre-



sents the machine in the more convenient form, made for Dr. Weiss by Herrn, Sommer, and Runge, 122, Wilhelmstrasse, Berlin, S.W. The round shallow metal vessel A contains 150c.c. when filled to the dotted line; a is a disc fixed to the vertical shaft, which works in bearings at b and c, and carries a pulley e, being rotated by means of the cord e¹



and the weights D and D¹. The number of rotations the disc makes in a given time, and with a constant power, depends upon the friction between the disc and the liquid being tested. From the number so obtained the composition of the liquid is readily found by a simple formula. Special tables are prepared for various materials. It is particularly suited to the examination of gum and sugar solutions, milk, mixtures of alcohol, water, beer, wine, fats, and oils.



## WATER PURIFICATION AND SOFTENING.

THE number of processes that are brought out for purifying or softening water is so great as to be almost overwhelming. To attempt to deal with all of them would be something closely akin to folly, as the majority prove to be distinctly ephemeral. With those that stand the test of time, forcing their way into prominence, it is a different matter, and it is incumbent upon us that we should accord to such processes the careful investigation they have merited. In the case of the Archbutt-Deeley process, which is now some five years old, we started upon the initial stages of investigation in November last. We then stated (*C.T.J.*, 443, p. 304) that the process clearly showed itself to be one that was worthy of further and more detailed description, and announced our intention of preparing the present article for this Special Issue. Before proceeding, we should here acknowledge our indebtedness to Mr. L. Archbutt, the inventor, for the special analytical data which he supplied at our request, and to Messrs. Mather and Platt, of the Salford Iron Works, Manchester, for their courtesy in affording us all the information we required concerning the plant. The process is applicable not only to the purification and softening of boiler waters, but also to the treatment of works' effluents. The outline of the latter method of treatment, as given in our issue of November 16th, 1895, needs very little filling in, and as the process presents several interesting and characteristic features when used for softening, we purpose in this article to practically confine ourselves to this—the original—application of the plant and process.

### THE PLANT

is simple, and a good idea of the general arrangement will be gathered from Figs. 1 and 2, which show a plant for treating 8,000 gallons per hour, and which we have ourselves seen in successful operation. From these illustrations the construction of the tanks will be seen, the small dissolving tanks for the preparation of the chemical precipitants, the injector pump attached to the same, and the scales for weighing off the chemicals also being shown. For 3,000 gallons per hour, and less, one softening tank is sufficient if storage is provided. For more than 10,000 gallons per hour, three or four tanks are desirable. A better idea of the details of the plant will be obtained from the sectional elevation and plan shown in Fig. 3. The chief point to be noted is the disposition of the dual service of pipes and their perfora-

tions. A glance at the two diagrams will show that the pipes are situated directly under one another, at different levels, thus constituting an upper and lower range of pipes, perforated respectively on their *upper* and *under* sides. To save repetition it is desirable to refer to the other details one by one as may be necessary in describing

### THE PROCESS.

While the tank is filling, quicklime and sodium carbonate (58% ammonia-alkali), in proportions which depend upon the character of the water, are weighed out, and tipped into the small chemical tank F. The lime is first slaked and then boiled by means of the perforated steam coil shown in the elevation, to form a milk of lime, after which the alkali is added and stirred until dissolved. Some waters require also the addition of a little aluminoferric (for which occasionally copperas is substituted). This is conveniently prepared in the form of a standard solution, of which a measured volume is added to each tank of water immediately after the chemicals have been run in. When the tank is full, and the inlet valve A has been closed, steam from the boiler is admitted to the blower B, causing a current of water to circulate up through the rose R, the three-way cock C, down the right-hand vertical pipe P, and back into the tank through the perforations in the *upper* row of horizontal pipes. On opening the small tap T, the prepared chemical solution is slowly drawn into the circulating current, and thus diffused throughout the body of water in the tank.

*Accelerating the Precipitation.*—This is one of the main features of the process. When the thorough intermingling of the chemicals has been effected, and the tap T has been closed, the cock D is opened to admit air through the pipe at the top of the blower, and by reversing the three-way cock C this air is forced down the left-hand pipe and through the perforations on the under

side of the *lower* row of pipes. From these it rises in streams of bubbles, stirring up some of the precipitate or mud from previous operations which lies on the bottom of the tank. Before being mixed with this mud, the new precipitate, which is very finely divided, will not coagulate, and takes a long time to settle; but when the old precipitate, consisting of coarse particles, is stirred up, the fine particles attach themselves to the coarse particles, and the subsidence of the precipitate is thereby greatly accelerated when the water is allowed to rest. Many theories can be advanced for the explanation of this fact, some of which

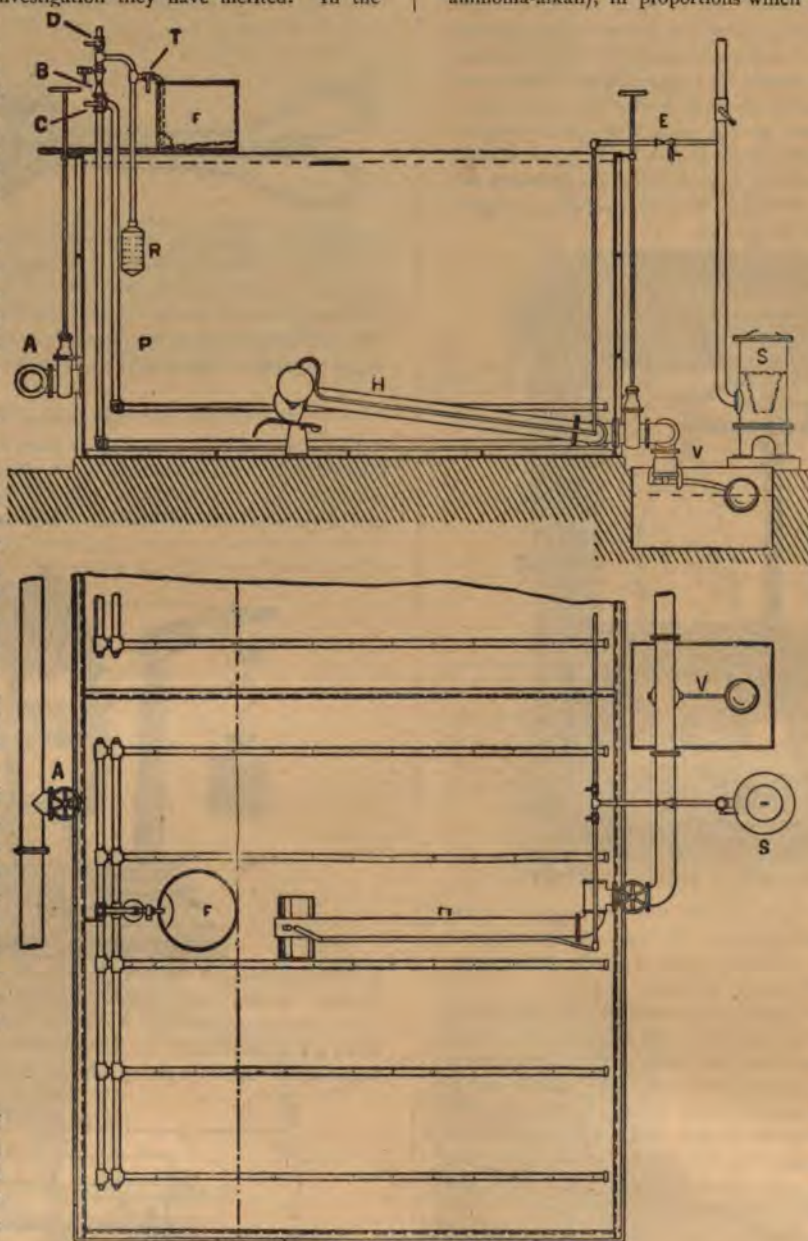


FIG. 3.







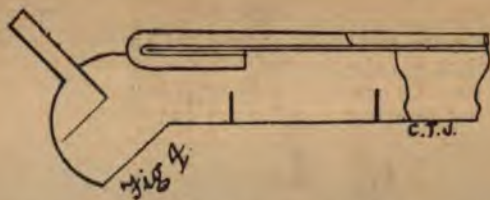
then selling at over £6. per ton as compared with £3. 7s. 6d. to-day. The practical working of the last four years has shown that the united cost of chemicals and labour amounts to rather less than 1d. per 1,000 gallons. The question of the removal of organic impurity should also be mentioned in passing. Very few of the waters used for boiler feeding purposes are wholly free from sewage, so that it is interesting to know that the Derwent water, showing 0.42 parts per million of albuminoid ammonia, gave, after treatment and 30 minutes subsidence, 0.28 parts per million. The absorbed oxygen was also nearly halved. To those troubled with bad and hard boiler water the interest of the foregoing will be greatly enhanced by the following figures, which show the results that have been attained with various waters in different localities, thus enabling a rough estimate of probable efficiency to be made for individual cases:—

## NO. I.

*River Derwent, at Derby, variable water, an average analysis gave:*

| Grains per Gallon.      |            |
|-------------------------|------------|
| CaCO <sub>3</sub> ..... | 8.86       |
| CaSO <sub>4</sub> ..... | 2.31       |
| MgCO <sub>3</sub> ..... | .69        |
| MgSO <sub>4</sub> ..... | 3.25       |
| MgCl <sub>2</sub> ..... | .26        |
| NaCl .....              | 2.00       |
| SiO <sub>2</sub> .....  | .25        |
| Organic matter          | 2.88       |
| Combined water          |            |
|                         | 20.50      |
| Hardness .....          | 14.34 deg. |

This water softened by adding a sufficiency of lime and 18 lb. of sodium carbonate (58% alkali) to 20,000 gallons has an average soap hardness of 4 deg.



Some of the water softened with lime and 24 lbs. of alkali to the tank of 20,000 gallons gave the following results on analysis:—

| Grains per Gallon.                    |                      |
|---------------------------------------|----------------------|
| CaCO <sub>3</sub> .....               | 1.46 = CaO 0.82 grs. |
| MgCO <sub>3</sub> .....               | 1.38 = MgO 0.66 "    |
| Na <sub>2</sub> CO <sub>3</sub> ..... | 5.43                 |
| Na <sub>2</sub> SO <sub>4</sub> ..... | 5.40                 |
| NaCl .....                            | 3.05                 |
| SiO <sub>2</sub> .....                | .44                  |
| Organic matter                        | 1.34                 |
| Combined water                        |                      |
|                                       | 18.50                |
| Hardness .....                        | 3.1 deg.             |

## NO. II.

*Well at Radford, Nottingham, 4,000 gallons per hour treated:—*

| Grains per Gallon.                      |            |
|-----------------------------------------|------------|
| CaCO <sub>3</sub> .....                 | 9.19       |
| CaSO <sub>4</sub> .....                 | 12.17      |
| MgCO <sub>3</sub> .....                 | 1.40       |
| MgSO <sub>4</sub> .....                 | 7.05       |
| Mg(NO <sub>3</sub> ) <sub>2</sub> ..... | 13.69      |
| MgCl <sub>2</sub> .....                 | .64        |
| NaCl .....                              | 6.30       |
| SiO <sub>2</sub> .....                  | .62        |
|                                         | 51.06      |
| Hardness .....                          | 35.53 deg. |

This water is softened by adding 25 lbs. of lime and 34 lbs. of sodium carbonate (58% alkali) to 9,000 gallons, and after treatment has

an average soap hardness of 3.2 deg. Analysis of the softened water on different dates gave the following results:—

|                | Grains per Gallon. |            |             |
|----------------|--------------------|------------|-------------|
|                | Oct., 1892.        | May, 1893. | Nov., 1893. |
| CaO .....      | 1.29               | 1.06       | 1.48        |
| MgO .....      | 1.42               | 0.19       | 0.68        |
| Hardness ..... | 5.82               | 2.36       | 4.33        |

## NO. III.

*Well at Adlington, Lancashire, treating 8,000 gallons per hour in plant illustrated; somewhat variable water. Two analyses gave:—*

|                                       | Grains per Gallon. |             |
|---------------------------------------|--------------------|-------------|
|                                       | Jan., 1894.        | Jan., 1895. |
| CaCO <sub>3</sub> .....               | 10.98              | 10.00       |
| MgCO <sub>3</sub> .....               | 4.56               | 4.76        |
| MgSO <sub>4</sub> .....               | 1.38               | —           |
| Na <sub>2</sub> CO <sub>3</sub> ..... | —                  | 4.19        |
| Na <sub>2</sub> SO <sub>4</sub> ..... | 3.41               | 4.15        |
| NaCl .....                            | 2.29               | 1.65        |
|                                       | 22.62              | 24.75       |
| CaO .....                             | 6.15               | 5.60        |
| MgO .....                             | 2.63               | 2.28        |
| Hardness .....                        | 17.50 deg.         | 15.65 deg.  |

This water is softened by adding about 35 lbs. of lime and 3 lbs. of sodium carbonate (58% alkali) to 14,000 gallons, and the hardness is reduced to about 3—3½ deg. An analysis made in December, 1894, showed:—

|                |                         |
|----------------|-------------------------|
| CaO .....      | 0.56 grains per gallon. |
| MgO .....      | 0.70 " " "              |
| Hardness ..... | 2.74 deg.               |

Such are results obtained with three widely different waters, for it will be noticed that the magnesia in Nos. II. and III. is considerable, though the hardness of No. 3 approximates that of No. 1. If further testimony is wanting it can be found, we think, in the fact that at the present time this softening process is being used successfully by bleachers, papermakers, chemical manufacturers, sugar refiners, and in laundries, treating in all 100,600 gallons per hour from day to day.

## FOR TREATING EFFLUENTS.

As applied to works' effluents there are 304,000 gallons per hour now being treated at different works. The process is just the same as described above, save that the carbonation is omitted, and the precipitant is varied to suit the requirements of the various trade effluents. The usual bugbear—the large space required for settling tanks—is obviated. At the same time, in addition to the advantage of speedy settling in a small area, the process is under absolute control, so that should the effluent, owing to exceptional circumstances, be under-treated, the error can at once be remedied and a perfectly satisfactory effluent passed out of the works. This is, we believe, an unique feature, and one that must commend itself to those who have experienced the difficulties of always satisfying the inspectors when working with a variable waste water in ordinary flow-through tanks.

## A SIMPLE SACK-HOLDER.

TILL the difficulties of trying to fill a sack single-handed have been ascertained by an actual trial, the full advantages of the simple contrivance we illustrate will probably not be adequately appreciated.

Those who have had to do with sack filling in the course of their businesses will, however, at once see the utility of this handy, labour-saving holder. By its use the work that formerly required a man and a lad can be as speedily accomplished by the man alone. Although so useful, they are nevertheless very cheap, and the saving in time and in labour will soon repay the initial outlay. The invention is one that we strongly commend to the notice of the many chemical trades in which it will be found useful, and to cement, manure, and sulphate of ammonia makers in particular.

The makers are Messrs. J. McDowall and Co., 230, Berkley street, Glasgow, from whom all particulars can be obtained.





### THE USE AND ABUSE OF RESPIRATORS.

THERE is little need to say much about the use of respirators if, as in the case of this article, we confine our consideration to industrial hygiene. But when we come to the question of utility and suitability there is much more to be said, since, as yet, we seem to be a considerable distance from perfection. A great deal depends on the form, as the wearers are very sensitive about their looks, and more so in regard to the mild banter that they have to suffer from those who are fortunate enough to have no need to wear anything of the kind. The reason for this delicate persecution cannot be argued out here, but it is characteristic of the astonishing inconsistency of the working classes, who clamour for protection and yet make laughing-stocks of those of their fellow-operatives who are sensible enough to make use of the facilities provided for their self-protection. In this article we shall exclude those forms designed for use with absolutely irrespirable gases, such as chlorine or carbon dioxide, etc., since for the former the flannel binder is now accepted by the Government to be efficient, while for the latter Kleemann's air-fed helmet is specially applicable, though for an every-day working appliance it would be useless.

series of comparative trials with the other forms are necessary to ascertain the relative filtering efficiencies, and tendencies to clog, thereby increasing the difficulty of respiration. The black respirator has no special advantage save that of lightness, which it shares with the linen nose-bag. On the other hand, it is generally objected to on account of the difficulty of breathing through it for any length of time. The third form has a flexible head that fits almost air-tight on the face. It is provided with outlet valves, which allow the breath as exhaled to escape, without permitting the entrance of unfiltered air. The filtering medium can be quickly removed, and fresh substituted, while, if necessary, it can be impregnated with an antidote. Its weight is sometimes a source of complaint, though it is not excessive. It is largely used in white-lead works, where it appears to give general satisfaction.

To the employer the respirator question is a troublesome one. It is remarkable how these respirators lose themselves, and constantly want replacing. In some works they have been known to be used as an extemporised football, particularly in the case of rubber ones. We know of one firm that provided separate lock-up cupboards so that each operative had his own muzzle to wear, and, after providing two



The three forms most generally employed in works and mills are shown in the accompanying illustration, in the production of which we are indebted to Messrs. Kerr and Hoegger, of Newton Heath, Manchester, for their co-operation and assistance. The calico bag arrangement is the latest recommendation of the Government, and, strange to say, finds favour with a certain class of operatives. It is generally fitted at the mouth with wire, which can be bent to fit the contour of the features. It is difficult to see any great advantage about the contrivance, and it certainly presents a serious disadvantage in necessitating the escape of the exhaled air through the same medium which has to filter the air breathed. This is not suggestive of great efficiency. The operatives seem to like it because it is the easiest to breathe through, a statement which strengthens our last remark somewhat. Another factor in its popularity is, we fear, the ease with which it can be slipped under the chin or round the neck, and yet quickly replaced the moment there is danger of a reprimand for such negligence. Before final judgment is passed on this form, we think a

different forms, has now had to supply the linen nose-bag to ensure anything like regular use. When the wearers are so whimsical it is no wonder some firms are not as strict as they might be on this point. The question of universal efficiency has yet to be settled, and until this has been done the numberless complaints and excuses made by those who have to wear them cannot be definitely disposed of.

**MANGANESE PEROXIDE.**—The uses of this well-known oxide are manifold. Potters use it for colouring glass and enamels, and varnish makers for the preparation of quick drying varnishes. It is also especially serviceable as a drier for oils, with the exception of one drawback, and that is the tendency which this oxide has to darken the oils. It appears that Herr J. Pannenberg, of Arnstadt, Thüringen, is now offering a special peroxide of manganese with which decidedly pale oils can be obtained, and it should therefore be favourably received by oil boilers. Herr Pannenberg also supplies all kinds of pottery and other minerals, such as spars, chrome ores, magnesite, and barytes.



### ABOUT ASBESTOS.

IT would seem as if there was no limit to the industrial applications of asbestos. It would not be an easy task to compile a list of *all* its uses at the present moment, and yet hardly a year passes without bringing with it additional outlets for the utility of this important mineral. In the technical press these are, in one way or another, duly chronicled, so that in a general way the busiest of busy men get to know about its uses; but, as a rule, they do not know much about the mining and preparation of asbestos. In this article, therefore, we



An Italian Asbestos Mine.

purpose relating and recording some of the more interesting particulars concerning the

#### MINING OF ASBESTOS,

leaving the details of preparing for another series of articles which, we trust, will appear in our columns in the course of this year.

Asbestos is a very widely distributed mineral, occurring in some fifteen different countries situated in both the Eastern and Western Hemispheres. Many of the deposits, however, are of poor quality. Of the poorer qualities, the asbestos found in South Africa and Russia is the best. The chief sources for commercial purposes, however, are Italy and Canada, to which centres attention will be chiefly paid.

Practically, the history of Italian asbestos dates back to the beginning of this century, when native enterprise produced a kind of cloth. It was not, however, till 1866, when Signor Albonico, in conjunction with a Florentine cleric and the Marquis di Baviera, obtained concessions, and set about producing cloth and paper, that asbestos began to acquire its claims to commercial importance, as well as purely scientific interest. Its development was unfortunately prematurely arrested in 1870 by the Franco-German war. The mines afterwards passed into other hands, and proved some of the richest in the world, one piece of nearly  $3\frac{1}{2}$  cwt. having been obtained from the mines of the United Asbestos Company in the vicinity. This rich district is situated in Lombardy, and is known as the Valtellina. It is divided into five communes, and the asbestos properties have an area of some 25,000 acres, or nearly 40 square miles. The height above sea-level of the mines hitherto opened out varies from 3,600 feet to 7,200 feet. The climate is, for such an elevation, comparatively mild, there being some places at a height of 6,000 feet where work can be carried on during the whole year. A large proportion of the population, which numbers about 5,000, is engaged in mining the mineral, the specimen shown in the illustration having been obtained from one of Signor Albonico's original mines, now owned by the United Asbestos Co.

Another district, of much the same importance, from which asbestos of commercial value is largely obtained by the United Asbestos Company is the Valley of Susa, which is reached from France *via* the Mont Cenis tunnel.

On emerging from the tunnel on the Italian side, the line follows the southern mountain slope, with a gradual descent, overlooking the town of Susa, standing at the head of the plain, which at times widening, and at times narrowing, for a distance of about 40 miles, finally opens out on the great plain of Piedmont. At a point in the centre of the valley, and on the northern mountain slope, are the places from which the floss asbestos fibre, the appearance of which in gas stoves is familiar to us all, is obtained. In the same locality is also found a fine white powder of asbestos, used in asbestos paint, and for other purposes. The ground from which these materials are got is about ten square miles in extent, and the works are carried on at a height of from 6,000 to 10,000 feet above sea level. The temperature is, of course, low at such an elevation, but the inhabitants are hardy and robust, and make willing miners. The works are reached by mule-paths for some distance, but the remainder of the way has to be done on foot, and from four to five hours are required for the journey from the plain, on which are the railway and high road. The first work done here in recent times dates from 1876. The mode in which the material is brought down the mountain side is by loading it on a sort of toboggan or sledge, which slides as easily over the rocks as over snow, and so expert are the inhabitants at this work that two men can bring down eight hundredweight of asbestos in three hours.

The third district of importance is the Aosta valley, commencing at Ivrea, a town of some importance, about 40 miles, in a nearly northern direction, from Turin. From Ivrea to Chatillon, a distance of a little under 30 miles, the railway passes through the heart of the asbestos properties which flank it on either side. The development of this district was indirectly due to the enterprise of Signor Albonico, for a certain Signor Antonio Re, of Rome, who had used the valley as a hiding-place during political troubles, heard of what was being done in



Specimen of Crude Italian Asbestos.

Lombardy, and determined to set to work on the mineral which he knew to exist in the valley. Up to this time the mineral found in this district had been thought to be of inferior quality, and not serviceable for any industrial purpose, so that no trouble was taken about it. In 1873, however, Signor Re undertook a search for some better qualities, and having assured himself that such could be found in abundance, he put himself in communication with the operators in Lombardy, and they, being satisfied with the material, started working on a pretty large scale.



It is impossible to give, with any degree of exactitude, the extent of the ground covering the asbestos mines in the Aosta valley, as it has not yet been thoroughly surveyed; but as the valley is some 75 miles in length, and varies in width from 5 to 40 miles, some idea may be formed of it. Notwithstanding the large quantity of asbestos that has been got, enormous deposits remain untouched, and the yield may almost be considered inexhaustible.

The quality of asbestos in the Aosta valley is not, however, similar to that in the Susa valley. It is of the kind known as "grey fibre," long, strong, and soapy to the touch, and is similar to that obtained in the Valtellina.



A Canadian Asbestos Mine.

We must now pass to the Canadian mines; but before describing the method of working these mines, it is necessary to explain the difference in the character of the asbestos found as compared with Italian asbestos. According to Dr. Ellis, and several other Canadian authorities, true mineral asbestos—that is to say, the Italian variety—belongs to the hornblende group of minerals, while that which is produced in Canada at the present day under the name of asbestos is in reality not asbestos proper, but a serpentine rock called chrysotile. This occurs in veins in certain portions of the great belt of serpentine rocks of the Eastern Townships of Quebec, especially in portions of the Townships of Thetford, Ireland, Coleraine, and Wolfetown. Although asbestos was known at many points in Eastern Quebec more than thirty years ago, and was exhibited at the International Exhibition in London in 1862, no attempt was made to work it.

The credit of the discovery of the Thetford area is probably due to a French Canadian named Fecteau, and following up his discovery certain areas were secured from the Government by private parties. The value of the mineral was not at first recognised, and in the first year of mining operations, 1878, only 50 tons were taken out, for which a ready sale was not obtained. The publication of the prospectus of the United Asbestos Company in the year 1880, however, gave a great impetus to asbestos mining enterprises, and new companies obtained tracts of rocky land in the townships of Thetford and Coleraine, and began the work of exploration and mining, the result being that from the year 1884 to the present time large and increasing quantities of asbestos have been exported from Canada, a large proportion of which, however, would be of the qualities known as second and third grades, and used largely in the United States for covering steam boilers and pipes, roofing, building, and other purposes.

Although asbestos mining and prospecting in Canada has continued for sixteen years, and the areas of serpentine are very extensive, the

proportions in which asbestos of good quality or in paying quantities is found, are in comparison so small that mining operations are practically confined to two centres only a short distance apart.

The rock carrying the marketable asbestos is generally a serpentine of some shade of green on fresh fracture, usually a greyish green, in which are contained numerous small particles of iron, both magnetic and chromic, more usually the former. Serpentine that have a black, hard, chippy, aspect do not promise well. In the asbestos-bearing rock proper the veins of asbestos are seen, without any special arrangement, intersecting the mass of the rock generally in every direction. In size they range from mere threads, sometimes close together, to a thickness of one to two inches, and, very occasionally, three to four inches. The asbestos from these larger-sized veins, provided it contains no serious impurities, is classed as grade No. 1, and is used for spinning and weaving; the shorter stuffs and such as contain impurities are classed as No. 2 and No. 3 respectively, these latter grades, as already pointed out, being used principally in the United States for millboard, boiler and pipe covering, and other purposes.

The process as practised in Canada is strictly quarrying rather than mining. Owing to the different nature of the ground hand labour, which is essential in Italy, has been largely superseded by steam derricks, pneumatic drills, or other modern mining appliances.

When a block of asbestos-bearing rock has been displaced by the usual methods employed in blasting, the pieces are broken up, barren rock removed to "dumps," or waste heap, and the remainder passed through the process of "cobbing," whereby the last of the rock is removed, and the asbestos exported in a form ready for the manufacturer.

From our illustrations, which explain themselves, the difference in the working conditions is as clearly shown as the difference between the two specimens.



Specimen of Crude Canadian Asbestos.

The uses of asbestos are naturally more or less of a technical or commonplace order, being largely employed in making packing, washers, paper cloth, millboard, sewing thread, tape, tubing and gloves for furnacemen, &c. It also plays a very important part in the preparation of fire-proof paints, and in the direction of fire-proofing it has, through the ingenuity of the United Asbestos Company, Limited, at last been applied to the manufacture of highly artistic as well as fire-proof panellings. These panels, under the name of "Salamander" decorations, are used for lining the saloons of Atlantic liners, thereby not only rendering them fire-proof, but producing all the artistic effects of elaborate Lincrusta decoration.



### THE BROOKLYN POLYTECHNIC INSTITUTE.

CONSIDERING the growing importance of Technological Education, we believe the following particulars about one of the leading American Technological Institutes will prove as helpful as they are interesting. For many years the Polytechnic Academy has been one

executive head. He has held many responsible official positions, being chairman of the New York section of the American Chemical Society, and a member of a number of other scientific societies at home and abroad. He has succeeded happily in keeping in touch with both pure and applied science, and hence the success of his work as a teacher of Chemical Technology.



CHEMICAL LECTURE THEATRE.

of the most celebrated of American Schools, and many distinguished professional men and leaders in the business world owe their success to the thorough training and careful development of character received at the "Poly." The school is situated near the City Hall and in the heart of Brooklyn, a city which is now rated at about a million of inhabitants. Although the standard of instruction is very high the number of boys in attendance is about eight hundred. A few years ago the Corporation of the Polytechnic, which includes some of the most prominent and wealthy citizens of Brooklyn, decided to add advanced courses and to found a college. A fine and commodious building, six storeys high, was erected at a cost of £75,000. The lecture and recitation rooms were equipped in accordance with the most modern ideas of scientific instruction, particular attention being paid to the gymnasium, swimming pool, and other details necessary to physical culture. Courses in Civil and Electrical Engineering and a Liberal Course, in which the classics are substituted by modern languages, were inaugurated, and men highly distinguished in their professions were called to take charge of them.

#### THE CHEMICAL SECTION.

The last course to be developed was the Chemical. In charge of this has been placed Peter T. Austen, Ph.D., F.C.S., formerly professor of chemistry in Rutgers College and the New Jersey State Scientific School, a chemist who was a student of Hofmann, and who has achieved an enviable reputation, both as a teacher, an organizer, and

Chemistry is taken up in the freshman year, a course of elaborately illustrated lectures being given, accompanied by "quizzes" and written recitations. In conjunction with this a course in experimental chemistry is given in the laboratories. This is followed by another course in experimental work, in which the experiments are mostly test-tube tests, but each experiment is made the subject of a searching "quizzing" about the nature of the re-actions involved, and demands a great deal of re-action writing and a careful study of the chemical changes and principles which are involved. Blow-pipe analysis follows. After the students have acquainted themselves with the behaviour of the elements under the blow-pipe a number of substances are analysed. Qualitative analysis is then taken up and fully developed, the laboratory work being accompanied by systematic "quizzing" and formulæ writing. Quantitative analysis begins with the analysis of pure substances, the student being required to re-crystallize and purify the substances analysed. This work is followed by the analysis of minerals, ores, and commercial substances. Later on the preparation of pure chemicals, organic analysis, and a course in experimental organic chemistry are taken up. Theoretical chemistry, chemical technology, organic chemistry, and stoichiometry are also fully taught. The graduates are encouraged to

take post-graduate work and perfect themselves in the methods of preparing chemical substances and undertake original investigation.

In addition to the chemical work the course includes instruction in



QUALITATIVE LABORATORY.



the subjects essential to a broad course of study, especial attention being paid to mathematics and a thorough knowledge of sight reading of scientific French and German. This is made obligatory, as in the senior year text-books in these languages are used.

The following schedule gives an outline of the studies of the course, several of the higher mathematical and classical subjects being



QUANTITATIVE LABORATORY.

omitted:—Solid Geometry, Chemistry (illustrated lectures), French, German, Inventive Geometry, Mechanical Drawing, Higher Equations, Logarithms, Electricity and Magnetism, Qualitative Analysis, Laboratory Manipulations, Engineering Field Work, Adjustment and Use of Instruments, Mechanics, Stoichiometry, Experimental Chemistry, Geology, Blow-pipe Analysis, Theoretical Chemistry, Hydraulics, Pneumatics, Acoustics, Heat, Optics, Quantitative Analysis, Chemical Technology, Crystallography, Mineralogy, and Organic Chemistry.

#### LABORATORY WORK OF THE CHEMICAL COURSE.

The following are the details of the Chemical course:—Introduction to Chemistry, Changes of Substances, Relations between Changes, Mixtures and Compounds, Chemical Action, Preparation and Chemical Conduct of Oxygen, Oxidation and Combustion, Preparation and Chemical Conduct of the Commoner Elements and their Compounds, Acids, Bases, Salts, Flame, Crystallization, Metals, Hydroxides, &c.

#### BLOW-PIPE ANALYSIS.

Blow-pipe Manipulation, Coat Tests, Bead Tests, Matrass and Tube Tests, Special Tests, Analysis of Substances by the Blow-pipe.

#### QUALITATIVE ANALYSIS.

Chemical Manipulations, Characteristic Reactions of the Elements and their Compounds, Classification of Substances by their Chemical Conduct, Qualitative Analysis of Substances, Examination of Natural and Technical Products, Special Forms of Testing, and Spectrum Analysis.

#### QUANTITATIVE ANALYSIS.

In addition to the usual salts which are prepared in a pure state and then analysed the course includes the following:—Copper Ore, German Silver, Waters for Boiler Use and Manufacturing, Water for Potable Use, Complete Fertilizer, Cast Iron, Wrought Iron, Steel, Vinegar, Bicarbonate of Soda, Chlorimetry (Bleach), Acetate of Lime, Coal, Milk, Lubricating Oil and Soap.

#### ORGANIC CHEMISTRY.

Preparation and Chemical Conduct of Methane, Chloroform, Monobromethane, Alcohol by Fermentation, Ethyl Ether, Aldehyde, Formic Acid, Acetic Acid, Ethyl Acetate, Acetyl Chloride, Cyanides, Cyanates, Sulphocyanates, Isocyanides, Saponification, Oxalic Acid, &c., and other Substances representing the Typical Classes of Organic Compounds and their Characteristic Changes, Visits to Manufactories.

#### POST GRADUATE WORK.

Qualitative Analysis applied to the Rare Elements, Testing of New Methods in Quantitative Analysis, Special Quantitative Methods, including Ultimate Organic Analysis, Preparation of Inorganic and Organic Substances, Assaying, Experimental Study of Waste Products, Technical Processes and Problems in Manufacturing Chemistry, Experimental Investigations in Pure Chemistry, Reading in the History of Chemistry, Pure and Applied Chemistry and Journal Literature, Photographic Processes, Dye Testing.

Professor Austen is assisted by Gillett Wynkoop, B.A., B.Sc.; W. Homer Broadhurst, B.Sc.; W. F. Doerflinger, B.Sc.; and H. M. Baker, jun.

Within an hour's travel of the Polytechnic there is embraced a number of cities exclusive of New York, making a total population of about four millions. There is hence an ample field for the Institute as well as for the other Colleges.



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## STAMPED STEEL BARRELS.

IT does not need any lengthy dissertation on the familiar wooden barrel to explain the advantages of the Caird Patent Steel Barrel over the old leaky combination of hoops and staves. It will be apparent to anyone who has had experience in the transit of liquids or chemicals in barrels, that for oils, like petroleum, varnishes, spirits, or chemicals, steel barrels must be as safe and handy as they are economical. There is no loss in transit, and repairs become an almost unknown quantity.



For chemicals and acids the barrels can be lined with copper or acid-resisting materials, while for liquids that require to be kept from contact with contaminating bodies they can be galvanised or tinned. From an industrial point of view, apart from their many obvious advantages, these barrels present a novel feature in the removable head. For solids or semi-solids such as soft soap, tallow, soda crystals, and other solid chemicals, this feature is of great importance, as with the old wooden heads it was necessary to break them in, after which it was not easy to effectually close the barrel when once opened. This advantage is illustrated in the first of the accompanying cuts. The second cut shows a very handy application of a stamped steel drum to the purposes of domestic storage. The tightness and cleanliness of this particular form should make it very popular with householders.



The barrels are made in two portions, being swaged from steel plates, the thickness of which is varied to suit the size of the finished barrel. The sections are joined by spinning the edges together, the locking being done in a manner that renders leakage impossible. A further advantage attaches to this method of uniting the two sections, in that the spun joint strengthens the barrel at the point of largest circumference, where in the course of ordinary usage the wear and tear is heaviest and the risk of denting greatest. The smaller sizes have one joint only, but the larger barrels are made in three or more sections. The weight is the same as that of an ordinary wooden barrel of equal capacity, while as they are made to gauge they always contain the same quantity whether in the 5 or 120 gallon sizes. The diameter of the former is about one foot and of the latter just under three feet. There are 250 of the small barrels to the ton.

The small steel drums are stamped in the same way as the barrels, though they are of different shape and construction.

The makers of these barrels and drums are the Iron and Steel Plant Co., Ltd., of 3, Crown-court, Old Broad-street, E.C. (the works being at Barrow-in-Furness), who are exporting them in considerable numbers, as samples, to all parts of the world. Additional and independent testimony to the utility of the barrels is afforded by the fact that the company was recently awarded a gold medal at the Middlesborough Exhibition.

## Our Book Shelf.

SOAP AND CANDLES. W. L. Carpenter. 2nd edition. Enlarged and revised by H. Leask. 446pp., with index. 104 illustrations. London: E. & F. N. Spon. 1895.

There are very few, in one industry or another, to whom the first edition of this work is not known, as it not only contains an account of manufacturing processes, but also describes methods of preparation which are of service to those desirous of producing in small quantities. The task of revision has apparently been ably executed as far as the text is concerned. The illustrations on the whole are good, but, with a few exceptions, the standard attained is not very high. The first eleven chapters deal with the history and theory of soap-making, the sources, preparation, and analysis of the raw materials and chemicals utilised, and the making, cutting, drying, and moulding of household soaps. There is also a brief reference to the theory of the action of soap and its valuation. In Chapter XII., we have an excellent article from Mr. J. Veitch Wilson on "Lubricants," under which heading a vast amount of information upon a number of widely varying products will be found. The remaining chapters are devoted to the manufacture of candles and the preparation of the materials used therefor. The weak point of the book is the chapter on glycerine, which is mainly devoted to a review of the patent literature of the subject. As a manufacturer's handbook on soaps and candles the work is, however, worthy of the strongest recommendation, the new edition containing much that all connected with these trades will do well to study.

HANDBOOK OF INDUSTRIAL ORGANIC CHEMISTRY. By S. P. Sadtler. 2nd edition. 537pp., including index. 127 illustrations. 14 diagrams. London: J. P. Lippincott & Co. 1895.

The best recommendation that this work can have is afforded by the fact that in such a comparatively short time a second edition has been called for. The aim of the book is somewhat out of the ordinary, for while its scope is very wide some of the information is very condensed. It is owing to this latter feature, however, that we should be inclined to attribute the success of the work, as it affords a convenient handbook from which all essential facts can be gathered in a few minutes, leaving details to be sought in the carefully prepared bibliographical appendixes which follow the various sections. The comprehensiveness of this work can easily be seen when we say that no less than 22 different industries are dealt with in its pages. The text has apparently been but slightly altered since the first edition, the chief changes being manifest in the bibliography, which in all cases has been carefully re-written and brought up to date. There are also several new tables and additional statistics. The work very truly justifies its title, and as a handbook of industrial organic chemistry it would be difficult to find another which at the same time is so well illustrated, so easy of reference, and so reliable.

GAS MANUFACTURE. By W. J. A. Butterfield. 375pp., with index. 62 illustrations. London: Chas. Griffin & Co., Ltd. 1896. 9s.

This is another addition to this firm's Text-book Series, and be it also said, a good one. From the sub-title we learn that the work aims at being a practical handbook of the chemistry of gas manufacture. It deals in particular with the production, purification, and testing of illuminating gas, and the assay of the bye-products in this industry. The illustrations are good, and in many cases original. As compared with other books on similar lines, the striking features are the treatment of gases other than coal gas, and enrichment processes. The chapter on photometry is one of the best in the book, and that on the applications of gas is out of the common, and interesting. On matters connected with the analysis of the bye-products there is a disappointing lack of detail, which in cases is very pronounced, though the chapter on gas analyses itself is much better in this respect. With this exception, unstinted commendation is certainly justified, and as the book is one that we venture to think will certainly call for subsequent editions, there should be little difficulty in removing this blemish.



## Market Reports.

### TAR AND AMMONIA PRODUCTS.

There is no change in the position of tar products, the market being quiet but steady. Benzols are as last quoted. Carbolic acids firm at 1s 9½d. for 60% crude, and 6½d. for 40% crystals. Solvent naphtha 1s. 6d. and crude 10d. Pitch slightly easier at 37s., f.o.b., East Coast.

Sulphate of ammonia is weak both in spot and forward positions. London outside makes are quoted at £8. 10s. spot, the same figure applying to Hull and Leith. Liverpool £8. 11s. 3d. Beckton price for February-March is £8. 12s. 6d.

### MISCELLANEOUS CHEMICAL MARKET.

In the alkali trade there is nothing special to note for the past week. Business continues fairly active, and all the works are well engaged with orders. Prices have been without any movement. Current quotations are for bleaching powder, f.o.b. Liverpool: £7. 5s. to £7. 10s., according to market; £7. f.o.r. makers' works. Alkali, 58%, £3. 7s. 6d. bags, f.o.r., and £3. 12s. 6d. to £3. 15s. casks, f.o.b. Soda crystals £2. 2s. 6d., f.o.b. For caustic soda the improved demand is still maintained, and prices are steady at:—F.o.b. Liverpool, 77%, £9. 7s. 6d.; 74%, £8. 10s.; 70%, £7. 10s.; 60%, £6. 10s. per ton, 10-ton lots and upwards. Chlorate of potash 4½d. to 4¾d. per lb. Chlorate of soda, 6½d. Price for nitrate of soda on the spot is 7s. 6d. per cwt., and forward business has been done at 7s. 9d. Saltcake 27s. 6d. per ton, f.o.r. Sulphate of copper £15. 10s. to £15. 15s., f.o.b. Liverpool. White powdered arsenic has further advanced, owing to great scarcity of supply, to £16. 10s., f.o.r. Garston. Potash, caustic and carbonate, continue to meet with good inquiry, and prices are well maintained. Green copperas is a steady market, all cheap supplies having been taken up. Acetate of lime, brown, still remains at £5. 2s. 6d. to £5. 5s. nett, c.i.f. English ports; grey £7. 10s. per ton. Acetate of soda in good request at £14. 5s. to £14. 10s., c.i.f. Acetic acid is still offered at low prices, and in all other acetates there is no perceptible sign of improvement. Sulphocyanides are in fair demand, and without change in value. Carbolic acid crystals meet with ready sale, and price is firm. Yellow prussiate of potash selling at 7¾d. to 8d. per lb., according to make. Cyanide, 95/98%, 1s. 4d. per lb. For borax and boracic acid the prices are more firmly held, owing to the better understanding among the makers. Murate of ammonia is in active request, and price firm at £22. 15s. to £23, in usual districts of consumption. Other ammonia salts steady in price. Generally trade is reported quiet in chemicals.

### LIVERPOOL OIL AND COLOUR MARKET.

WEDNESDAY.

OILS.—There is a small business doing in palm oil, Lagos selling at £20. 5s. transit and New Calabar £18. 10s. to arrive. Olive is quietly moving, with limited sales of Seville at £30. 10s. per tun. There is a weaker tone in linseed, which is now offering at 20s. 6d. to 21s., for Liverpool makes in export casks. Cottonseed is steady, prices for Liverpool refined being 17s. to 17s. 6d. per cwt. Castor oil is steady, a moderate business being done at 2½d. for good seconds Calcutta, and 2¾d. per lb. for first pressure French. There is nothing to be said about tallow, save that it is quietly steady. Resin is more active on spot, and holders keep steady at late rates for the lower grades. Spirits of turpentine are steady at 21s. 9d. per cwt., there being a fairly large amount of business doing at this figure. Petroleum is quiet, though so far there have been no changes in price, American still standing at 7¾d. to 8d., and Russian refined 7d. per gallon.

### HULL PAINT, OIL, AND COLOUR REPORT.

TUESDAY.

OILS.—The general situation in the oil trade here is satisfactory, the demand being well sustained and values show little alteration, excepting an advance of almost £1. per ton in rape oil. The shipments of cottonseed from Alexandria for the United Kingdom since September 1st have been:—Hull, 88,060 tons, against 89,000 tons a year ago; London, 25,500 tons, against 31,400 tons; other ports, 53,580 tons, against 47,300 tons. The imports during this year, 1896, have been:—Linseed, 30,803 quarters, against 12,642 quarters a year ago; rapeseed, 1,210 quarters, against 11,466 quarters; cottonseed, 10,401 tons, against 5,137 tons; olive oil, 341 casks, against 759 casks; rape oil, 175 casks, against 250 casks; oil cakes, 1,500 tons, against 1,141 tons; tallow, 776 cwt., against 1,107 cwt.; bones, 572 tons, against 50 tons; turpentine, 2,612 barrels, against 2,952 barrels. Linseed oil steady at 19s. naked spot, January-April offer at 19s., and May-August 18s. 10½d.; boiled and refined ditto, £1. to £2. per ton extra. Refined cotton oil steady at 14s. 9d. naked spot, January-April quoted 15s. 1½d., and May-August 15s. 10½d.; ordinary

barrels 30s. and casks £1. per ton extra. Export for week, 3,860 cwt. Spanish olive oil offers as low as £30. per tun, ex ship. Spirits of turpentine, 22s. 3d. per cwt. Castor oil firm at previous quotations. Siccative oil, £13. per ton. Liquid soap, £16. per ton. Cod oils from £16. 10s. to £19. per ton. Mineral lubricating oils are scarce and firm in price. Sweet fat, £26. per ton, in 1-cwt. kegs. Locomotive grease, £12. per ton.

CAKES.—Linseed cakes are a firm market: 95% pure, £6. 5s.; Russians, £5. 17s. 6d. Oil cakes, £5. 5s. Cotton cakes steady: best makes, £3. 15s.; seconds, £3. 10s. to £3. 12s. 6d. Rape cakes unaltered.

PAINTS.—This trade here is working at high pressure, makers being exceptionally busy, and here and there a confession is extracted that the result of last year's trading is eminently satisfactory. Prices:—White lead is very firm in price, as also red lead, being quoted £16. 10s. and £14. 10s. per ton respectively; oxide zinc from £22. to £26. Dry mineral colours unchanged and in good request. Ultramarines, 3d. to 8d. per lb.; black, blue, red oxide, green, and venetian red paints from £11. per ton. Ready-mixed paints, in lever tins, one, two, four, and seven pounds, from £24. per ton. Paint remover, 25s. per cwt. Natural belt dubbin, 12s. per gallon.

### TYNE CHEMICAL REPORT

TUESDAY.

The chemical trade is still quiet, though there is perhaps a shade more business, and shipments for the time of the year are fairly good. Soda crystals are quoted at £2. 2s. 6d. per ton, gross weights, locally. Sulphur scarce at £3. 17s. 6d. per ton. Caustic, 76/77% £9. 5s., and 70% £7. 10s. to £7. 15s. per ton. Other products unaltered.

Bleaching powder, softs, £7. 5s. per ton, nett; hards, £7. 10s. per ton, nett; caustic soda, 76/77%, £9. 5s. per ton, nett; do., 70%, £7. 15s. per ton, nett; recovered sulphur, 2 cwt. bags, £3. 17s. 6d. per ton, nett; soda ash, 48%, £3. 15s. per ton, nett; do., 52%, £3. 17s. 6d. per ton, nett; do., 56%, £4. per ton, nett; alkali, 36%, £2. 15s. per ton, nett; white alkali, 48%, £4. 10s. per ton, nett; do., 50%, £4. 15s. per ton, nett; do., 52%, £5. per ton, nett; hyposulphite of soda, 5-7 cwt. casks, £6. 5s. per ton, nett; do., 1 cwt. kegs, £7. per ton, nett; silicate of soda, 75° Tw., £2. 12s. 6d. per ton, nett; do., 100° Tw., £3. per ton, nett; do., 140° Tw., £3. 7s. 6d. per ton, nett; soda crystals, casks, £2. 2s. 6d. per ton, gross weight; do., 2 cwt. bags, £2. 2s. 6d. per ton, nett weight; chlorate of potash, 5d. per lb., less 6%; pearl hardening, £3. per ton, nett; pure white sulphate of alumina, £3. 17s. 6d. per ton, nett; blanc fixe, £7. 5s. per ton, nett; chloride of barium, refined crystals, £6. 15s., per ton, nett; do., 90/95%, crude calcined, £6. per ton, nett; sulphide of barium, crystals, £4. 15s. per ton, nett; carbonate of alumina, £30. per ton, nett; aluminate of soda, £50.

SALT.—South Durham salt is steady at 9s. 6d. per ton, f.o.b., Tees.

COALS.—There is practically no alteration in the market, and prices show an advance of about 3d. on last quotations.

### WEST OF SCOTLAND CHEMICALS.

GLASGOW, TUESDAY.

In sulphate of ammonia there has been a rally of a sort, very feebly in its kind, and probably due only to monetary causes. At Leith, but not at Glasgow, £8. 11s. 3d. has been paid for prompt, but the feeling, as reflected from the continent, does not at all back up the idea of a real recovery, for there the view taken is more decidedly to the low side than ever. The forward market is quite idle here. The general chemicals market opens the New Year with fairish prospects. The call for deliveries is not a very loud one, but prices for the most part are firm and steady. Sulphate of copper is cheaper, but all the others remain as before. Mineral oils continue in large deliveries at the old prices firmly held, but the period is now approaching when the consumption of burning oil will begin gradually to draw in for the season. Naphtha is steady at the old quotations. The position of scale and wax is still indeterminate, and the agreement prices given below must be held as merely nominal, there being for the moment no agreement. A meeting took place in London last week, producing no change in the situation. Another meeting takes place in Glasgow this week, but it is not expected that this will put a finish to the dispute in any way.

Chief prices current are:—Soda crystals, £2. 2s. 6d., nett, Tyne; soda ash, 48/56%, £3. 15s. to £4. 15s. nett, Tyne; white alkali, 48/52%, £4. 10s. to £5. nett, Tyne; alum in lump, £5. 10s. nett, Glasgow; caustic soda, white, 76° £9. 5s., 70/72° £7. 10s., 60/62° £6. 10s., and cream 60/62° £6. 10s., all nett, Liverpool; bleaching powder, £6. 15s. to £7. 5s. nett, Tyne; saltcake, 27s. 6d.; borax, English, refined, £20., and boracic acid, £30. nett, Glasgow; bicarbonate of soda, 5-cwt. casks, £6. 10s., and 1-cwt. casks £6. 15s. nett, Liverpool; bichromate of potash, 4½d. nett, for Scotch and English deliveries (for export, 4¼d. nett, f.o.b. Glasgow); bichromate of soda, 3¾d. nett, for Scotch and English deliveries (for export, 3½d. nett, f.o.b. Glasgow).







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| Germany, 500 pks.           | F. W. Berk & Co.                      |
| " 151                       | Anglo-Contl. G. Wks.                  |
| <b>Potassium Cyanide—</b>   |                                       |
| Holland, 45 pks.            | F. Boehm                              |
| <b>Pumice Stone—</b>        |                                       |
| Italy, 5 t.                 | O'Hara & Hoar                         |
| " 5                         | J. F. Power, Ltd.                     |
| " 10                        | Seaward Bros.                         |
| <b>Rosin—</b>               |                                       |
| U. States, 250 brls.        | Moore & Hole                          |
| <b>Saltpetre—</b>           |                                       |
| Holland, 10 cks.            | Petri Bros.                           |
| Germany, 20                 | T. H. Lee                             |
| " 20                        | T. Merry & Son                        |
| " 42                        | J. Hall & Son                         |
| <b>Silicate—</b>            |                                       |
| Germany, £5                 | T. H. Lee                             |

|                             |                              |
|-----------------------------|------------------------------|
| <b>Soda Ash—</b>            |                              |
| Belgium, 880 c.             | R. Waters                    |
| <b>Sodium Bichromate—</b>   |                              |
| Germany, 48 pks.            | C. Tennant, Sons, & Co.      |
| <b>Sodium Hyposulphite—</b> |                              |
| Holland, 128 pks.           | Petri Bros.                  |
| " 217                       | Beresford & Co.              |
| " 200                       | R. W. Greeff & Co.           |
| <b>Starch—</b>              |                              |
| Holland, 481 pks.           | Little & Johnston            |
| " 85                        | Phillips & Graves            |
| Belgium, 87                 | F. Claydon & Co.             |
| France, 50                  | Bennett S. S. Co.            |
| Belgium, 62                 | T. H. Lee                    |
| Germany, 1,860              | Horne & Co.                  |
| Belgium, 60                 | J. Harrison                  |
| " 158                       | Leach & Co.                  |
| " 180                       | Taylor Bros.                 |
| " 138                       | J. Barber & Co.              |
| <b>Stearine—</b>            |                              |
| Belgium, 118 bgs.           | H. Hill & Sons               |
| France, 250                 | "                            |
| " 100                       | G. Boor & Co.                |
| <b>Sulphur—</b>             |                              |
| Italy, 20 t.                | Jessop & Co.                 |
| " 42                        | G. Boor & Co.                |
| " 20                        | Elkan & Co.                  |
| <b>Talc—</b>                |                              |
| China, £120                 | G. G. Blackwell, Sons, & Co. |
| <b>Tar—</b>                 |                              |
| Germany, 3 brls.            | Chilworth                    |
| "                           | Gunpowder Co.                |
| <b>Tartar—</b>              |                              |
| Italy, 8 pks.               | A. E. Piggott                |
| <b>Tartaric Acid—</b>       |                              |
| France, 20 pks.             | B. & F. Wf. Co.              |
| Italy, 10                   | "                            |
| " 8                         | F. C. Devon & Co.            |
| Belgium, 5                  | H. Lorenz                    |
| Holland, 17                 | W. M. Smith & Sons           |
| " 2                         | F. C. Devon & Co.            |
| Germany, 10                 | B. & F. Wf. Co.              |
| " 10                        | W. C. Bacon & Co.            |
| Holland, 12                 | Kirkpatrick & Co.            |
| " 7                         | B. & F. Wf. Co.              |
| <b>Ultramarine—</b>         |                              |
| Holland, 3 cks.             | Phillips & Graves            |
| " 1 cs.                     | W. Harrison & Co.            |
| Germany, 4 cks.             | H. Lambert                   |
| Holland, 20                 | Hernu, Peron, & Co.          |
| <b>Varnish—</b>             |                              |
| Germany, 12 pks.            | T. H. Lee                    |
| " 60                        | L. & I. Dk. Co.              |
| U. States, 55               | Taylor Bros.                 |
| France, 3                   | Flageollet & Co.             |
| <b>Verdigris—</b>           |                              |
| France, 7 pks.              | B. & F. Wf. Co.              |
| <b>Vermillion—</b>          |                              |
| Hong Kong, 2 cks.           | L. & I. D. Jt. Co.           |
| <b>White Lead—</b>          |                              |
| Italy, 4 cks.               | T. Palmer                    |
| Germany, 58                 | D. Storer & Sons             |
| France, 38                  | J. Watts & Son               |
| Germany, 12                 | W. & A. Hampton              |
| " 24                        | Spies Bros. & Co.            |
| Italy, 56                   | T. & W. Farmiloe             |
| Holland, 48                 | "                            |
| " 19                        | Blundell, Spence, & Co.      |
| Germany, 91                 | Randall Bros.                |
| " 20                        | N. J. Fenner & Co.           |
| " 68                        | F. G. Clifford               |
| Holland, 29                 | Perkins & Homer              |
| <b>Wood Pulp—</b>           |                              |
| Holland, 84 bls.            | Henderson, Craig, & Co.      |
| Canada, 2,907               | E. J. & W. Goldsmith         |
| Norway, 300                 | Tough & Henderson            |
| Germany, 335                | Becker & Wagner              |
| Holland, 1,718              | E. J. & W. Goldsmith         |
| " 18                        | H. Johnson & Sons            |
| Sweden, 398                 | W. G. Taylor & Co.           |
| Germany, 400                | W. Friedlaender              |
| Holland, 67                 | Hernu, Peron, & Co.          |
| <b>Zinc Chloride—</b>       |                              |
| Holland, 14 pks.            | J. Owen                      |
| <b>Zinc Oxide—</b>          |                              |
| Holland, 15 cks.            | J. Matton                    |
| Germany, 100                | M. Ashby, Ltd.               |
| " 500                       | Soundy & Sons                |
| France, 25                  | Fleming's Oil Co., Ltd.      |
| U. States, 100              | M. Ashby, Ltd.               |
| Holland, 500                | Soundy & Sons                |
| <b>Zinc Sulphate—</b>       |                              |
| Germany, 31 pks.            | City Coml. Wf.               |

## LIVERPOOL.

Week ending January 2nd.

|                         |                             |
|-------------------------|-----------------------------|
| <b>Acetate of Lime—</b> |                             |
| New York, 195 bgs.      | J. W. Coulston & Co.        |
| " 1,795                 | "                           |
| <b>Antimony Ore—</b>    |                             |
| Antofagasta, 110 sks.   | A. Gibbs & Sons             |
| <b>Asbestos—</b>        |                             |
| New York, 104 bgs.      | Bennett Flamank             |
| <b>Barytes—</b>         |                             |
| Rotterdam, 23 cks.      | "                           |
| Antwerp, 50 bgs.        | "                           |
| <b>Bone Ash—</b>        |                             |
| B. Ayres, 150 bgs.      | "                           |
| Zarate, 343             | "                           |
| <b>Borate of Lime—</b>  |                             |
| Iquique, 605 bgs.       | "                           |
| <b>Borax—</b>           |                             |
| Rosario, 276 bgs.       | Blundell, Spence & Co.      |
| Mollendo, 600 bgs.      | 1,725 sks.                  |
| Valparaiso, 1,740       | "                           |
| <b>Caoutchouc—</b>      |                             |
| Hamburg, 14 bgs.        | "                           |
| Valparaiso, 8 cs.       | J. H. Schroder & Co.        |
| <b>Carbolic Acid—</b>   |                             |
| Rotterdam, 5 cks.       | "                           |
| <b>Castor Oil—</b>      |                             |
| Calcutta, 200 cs.       | "                           |
| <b>Chrome Ore—</b>      |                             |
| Baltimore, 20 cks.      | P. R. McQuie & Son          |
| <b>Cobalt Oxide—</b>    |                             |
| Rotterdam, 20 cs.       | "                           |
| <b>Cod Oil—</b>         |                             |
| Hamburg, 10 cks.        | "                           |
| St. John's, 36          | C. T. Bennett               |
| <b>Colours—</b>         |                             |
| Stettin, 10 cks.        | W. Slater                   |
| " 80                    | A. Wilkinson & Sons         |
| " 1                     | "                           |
| Antwerp, 6              | 1 ble.                      |
| Hamburg, 27 cs.         | "                           |
| Rotterdam, 2            | "                           |
| <b>Cottonseed Oil—</b>  |                             |
| New York, 200 brls.     | "                           |
| N. Orleans, 100         | "                           |
| <b>Cream of Tartar—</b> |                             |
| Tarragona, 5 cks.       | Sachse & Klemm              |
| Rotterdam, 2            | "                           |
| <b>Dextrine—</b>        |                             |
| Stettin, 85 bgs.        | "                           |
| <b>Dyestuffs—</b>       |                             |
| <b>Cochineal</b>        |                             |
| Gd. Canary, 20 bgs.     | Kolp & Co.                  |
| " 20                    | J. M. Ceballos & Co.        |
| " 40                    | G. Amsinch & Co.            |
| " 20                    | Elder, Dempster & Co.       |
| " 16                    | Swanston & Co.              |
| " 10                    | Canary I. Trading Co., Ltd. |
| <b>Gutch</b>            |                             |
| Boston, 250 bks.        | "                           |
| Rangoon, 45             | 1,333 cs.                   |
| <b>Divi Divi</b>        |                             |
| San Domingo, 18 bgs.    | Frame, Alston & Co.         |
| <b>Extracts</b>         |                             |
| Bordeaux, 300 cks.      | "                           |
| Fiume, 193 brls.        | De Clermont & Donner        |
| <b>Fustic</b>           |                             |
| Vera Cruz, 20 t.        | Butcher & Co.               |
| " 20                    | E. Hoffmann                 |
| Tampico, 1,793 ps.      | Oetling & Co.               |
| " 6,722                 | D. Midgley & Son            |
| " 4,205                 | W. H. Thompson & Co.        |
| <b>Indigo</b>           |                             |
| Calcutta, 163 cts.      | "                           |
| <b>Logwood</b>          |                             |
| Belize, 153 t.          | "                           |
| <b>Madder</b>           |                             |
| Smyrna, 28 bls.         | "                           |
| <b>Orchella</b>         |                             |
| Valparaiso, 8 bls.      | Kaltenbach & Schmitz        |
| <b>Saffron</b>          |                             |
| Valencia, 2 cs.         | "                           |
| <b>Sumac</b>            |                             |
| Palermo, 560 bgs.       | Bank of Brit. North America |
| " 300                   | "                           |



|                             |             |                             |  |
|-----------------------------|-------------|-----------------------------|--|
| <b>Valonia</b>              |             |                             |  |
| Patras,                     | 600 bgs.    | Proteapazi Ars.             |  |
| "                           | 400         | C. Theochoria               |  |
| "                           | 273         | A. M. Calliagn              |  |
| "                           | 800         | Papayanni & Jeremias        |  |
| "                           | 223         |                             |  |
| Syra,                       | 225         | A. C. Cozzifachi            |  |
| "                           | 200         | Barfi & Co., Ltd            |  |
| Smyrna,                     |             | 300 t. Barry Bros.          |  |
| "                           |             | 150 G. Essayan & Co.        |  |
| "                           | 469         | D. A. Galatti & Co.         |  |
| "                           | 8,022       | 200                         |  |
| <b>Farina—</b>              |             |                             |  |
| Fiume,                      | 631 bgs.    | 40 bls.                     |  |
| Stettin,                    | 50          | W. Slater                   |  |
| "                           | 200         |                             |  |
| Antwerp,                    | 20          |                             |  |
| <b>Glucose—</b>             |             |                             |  |
| Philadelphia,               | 50 brls.    |                             |  |
| New York,                   | 400         | T. M. Duché & Son           |  |
| <b>Glue—</b>                |             |                             |  |
| Hamburg,                    | 200 bgs.    |                             |  |
| Boston,                     | 48 cs.      | T. Robinson & Co.           |  |
| St. Nazaire,                | 9 cks.      |                             |  |
| Fiume,                      | 20 bls.     |                             |  |
| New York,                   | 50          | Eng. & Amer. Machine Co.    |  |
| Trieste,                    | 50 bgs.     | Ullmann, Miller & Co.       |  |
| <b>Lamp Black—</b>          |             |                             |  |
| Philadelphia,               | 35 brls.    |                             |  |
| <b>Manganese Carbonate—</b> |             |                             |  |
| Huelva,                     | 1,430 t.    |                             |  |
| <b>Manganese Ore—</b>       |             |                             |  |
| Poti,                       | 2,150 t.    | Darwen & Mostyn Iron Co.    |  |
| "                           |             | E. W. Turner                |  |
| Bayonne,                    | 2,300       | The Wigan Coal Co.          |  |
| <b>Molasses—</b>            |             |                             |  |
| Gd. Canary,                 | 1 cs.       |                             |  |
| <b>Paraffin Scale—</b>      |             |                             |  |
| Philadelphia,               | 196 brls.   |                             |  |
| New York,                   | 560 cs.     | Thompson & Bedford          |  |
| "                           | 590         |                             |  |
| Rangoon,                    | 350 bxs.    |                             |  |
| <b>Phosphate—</b>           |             |                             |  |
| Ghent,                      | 400 t.      |                             |  |
| Bruges,                     | 300         |                             |  |
| <b>Phosphate Rock—</b>      |             |                             |  |
| Fernandina,                 | 1,580 t.    |                             |  |
| <b>Potash—</b>              |             |                             |  |
| Dunkirk,                    | 2 brls.     | 11 cks.                     |  |
| Antwerp,                    | 16 dms.     |                             |  |
| New York,                   | 5 cs.       | Fraser & Chalmers, Ltd.     |  |
| <b>Pumice Stone—</b>        |             |                             |  |
| Messina,                    | 75 cs.      |                             |  |
| <b>Pyrites—</b>             |             |                             |  |
| Huelva,                     | 3,275 t.    | Matheson & Co.              |  |
| <b>Rosin—</b>               |             |                             |  |
| Savannah,                   | 3,849 brls. |                             |  |
| "                           | 1,700       | R. Hulme                    |  |
| <b>Saltpetre—</b>           |             |                             |  |
| Hamburg,                    | 155 kgs.    | 4 cks.                      |  |
| <b>Soap—</b>                |             |                             |  |
| Syria,                      | 1 cs.       |                             |  |
| Boston,                     | 4           | J. Thompson                 |  |
| <b>Soapstone—</b>           |             |                             |  |
| Bordeaux,                   | 200 bgs.    | G. G. Blackwell, Sons & Co. |  |
| <b>Starch—</b>              |             |                             |  |
| Philadelphia,               | 400 bgs.    |                             |  |
| Antwerp,                    | 41 cs.      | J. T. Fletcher              |  |
| "                           | 140         |                             |  |
| Hamburg,                    | 136         |                             |  |
| New York,                   | 175 sks.    |                             |  |
| <b>Stearine—</b>            |             |                             |  |
| Antwerp,                    | 3 cks.      | J. T. Fletcher & Co.        |  |
| Bordeaux,                   | 4 cs.       |                             |  |
| St. John's,                 | 30          | C. T. Bowring & Co.         |  |
| Rotterdam,                  | 100 bskts.  | 7 bgs.                      |  |
| <b>Superphosphate—</b>      |             |                             |  |
| Antwerp,                    | 100 bgs.    |                             |  |
| <b>Talc—</b>                |             |                             |  |
| Trieste,                    | 100 bgs.    | G. G. Blackwell, Sons & Co. |  |
| <b>Tallow—</b>              |             |                             |  |
| Philadelphia,               | 125 tcs.    |                             |  |
| New York,                   | 100 hds.    |                             |  |
| San Nicholas,               | 150 brls.   | J. Nelson & Sons, Ltd.      |  |
| Zarate,                     | 360 pipes   | "                           |  |

Campana, 700 cks.  
Fray Bentos, 147 qr.-cks. 793 hds.  
Liebeg's Extract Meat Co., Ltd.

**Tartar—**  
Bordeaux, 13 cks.  
**Tartaric Acid—**  
Rotterdam, 8 cks.  
**Treacle—**  
Copenhagen, 87 cks. Brown, Geveke & Co.  
Philadelphia, 50 brls.

**Turpentine—**  
Savannah, 2,633 brls. R. Hulme

**Varnish—**  
Hamburg, 72 colls.

**Waste Salt—**  
Hamburg, 1,016 bgs.

**White Lead—**  
Dunkirk, 10 cks.  
Trieste, 15 brls. Richardson, Spence & Co.  
Rotterdam, 20 J. Matthews & Co.

**Wood Pulp—**  
Rotterdam, 200 bls.  
Saunesund, 2,544 Kellner Partington Paper Pulp Co., Ltd.

**Zinc Oxide—**  
Antwerp, 23 brls.  
New York, 150  
Rotterdam, 50 cks. J. Matthews & Co.

**Zinc White—**  
Rotterdam, 60 cks.

**MANCHESTER.**  
Week ending January 4th.

**Albumen—**  
Treport, 15 cs.

**Aniline Colours—**  
Rotterdam, 1 ck.

**Bone Ash—**  
Rio Grande do Sul, 422 t.

**Colours—**  
Rotterdam, 13 cs. 62 brls. 6 bxs.  
Antwerp, 10 cks. J. T. Fletcher & Co.

**Dyestuffs—**  
Allizarine  
Rotterdam, 15 cks.

**Extracts—**  
Treport, 7 cks.  
Rotterdam, 10  
Antwerp, 6

**Shumac**  
Bordeaux, 50 bls. J. & P. Hutchison

**Farina—**  
Stettin, 1,150 bgs. Brown, Geveke & Co.

**Glucose—**  
Rotterdam, 4 cks.

**Glue—**  
Stettin, 30 bgs.

**Limestone—**  
Antwerp, 3 cs.

**Ochre—**  
Treport, 41 cks.

**Potash—**  
Treport, 17 cks. 34 dms.

**Potassium Chlorate—**  
Stockholm, 50 kgs. Stott, Coker, & Co.

**Potassium Chloride—**  
Bordeaux, 17 cks. J. & P. Hutchison

**Pyrites—**  
Huelva, 1,126 t.

**Starch—**  
Rotterdam, 10 cs.

**Stearine—**  
Antwerp, 6 bgs.

**Tartar—**  
Bordeaux, 1 ck. J. & P. Hutchison

**Tartaric Acid—**  
Rotterdam, 2 cks.

**White Lead—**  
Rotterdam, 18 cks.

**Wood Pulp—**  
Kotka, 2,400 bls. Manchester Ship Canal Co.

Geffe, 3,655 Stott, Coker, & Co.  
Sundswall, 2,879  
Fredrikshald, 3,750  
Gothenburg, 4,198  
Drammen, 253

**Zinc Oxide—**  
Rotterdam, 75 brls.  
Antwerp, 11

## HULL.

Week ending January 4th.

**Acid—**  
Bari, 8 cks. Wilson, Sons, & Co., Ltd.

**Barytes—**  
Antwerp, 34 cks. Bailey & Leatham

**Riga,** 33 Johnson Bros.  
5 Wilson, Sons, & Co., Ltd.

**Antwerp,** 105  
231 Hutchinson & Son

**Castor Oil—**  
Molfetta, 690 brls. Wilson, Sons, & Co., Ltd.

**Chemicals (otherwise undescribed)**  
Stettin, 10 cks. Wilson, Sons, & Co., Ltd.

**Bremen,** 2 kgs. Veltmann & Co.

**Rotterdam,** 5 cs. W. & C. L. Ringrose

**Hamburg,** 10 pks. Wilson, Sons, & Co., Ltd.

**Dunkirk,** 37

**Colours—**  
Bremen, 1 ck. Furley & Co.

**Danzig,** 11  
7 27 cs. 12 brls.  
1 bx. W. & C. L. Ringrose

**Antwerp,** 8  
3 pks. Wilson, Sons, & Co., Ltd.

**Cryolite—**  
Copenhagen, 4 cks. Wilson, Sons, & Co., Ltd.

**Dextrine—**  
Stettin, 170 bgs. Wilson, Sons, & Co., Ltd.

**Dyestuffs—**  
Allizarine  
Rotterdam, 57 cks. 8 brls. W. & C. L. Ringrose

**Sumac**  
New York, 37 bgs. Wilson, Sons, & Co., Ltd.

**Trieste,** 219 bls.  
Palermo, 3,125 bgs.

**Farina—**  
Stettin, 55 bgs. Wilson, Sons, & Co., Ltd.

**Hamburg,** 100  
Harlingen, 50  
Hamburg, 105

**Glucose—**  
Stettin, 25 cks. 700 bgs. Wilson, Sons, & Co., Ltd.

**Glue—**  
Rotterdam, 8 bgs. W. & C. L. Ringrose

**Rouen,** 7 cks. 40 bls. Rawson & Robinson

**Rotterdam,** 8 Hutchinson & Son

**Dunkirk,** 115 Wilson, Sons, & Co., Ltd.

**Kaolin—**  
Amsterdam, 20 cks. Hutchinson & Son

**Manganese—**  
Hamburg, 7 cks.

**Naphtha—**  
Riga, 1 ck. Helmsing & Son

**Ochre—**  
Rouen, 111 cks. Rawson & Robinson

**Phosphorus—**  
New York, 41 cs. Wilson, Sons, & Co., Ltd.

**Potash—**  
Dunkirk, 20 dms. Wilson, Sons, & Co., Ltd.

**Antwerp,** 59 pks. "

**Pumice Stone—**  
Messina, 10 cks. Wilson, Sons, & Co., Ltd.

**Saltpetre—**  
Hamburg, 2 cks.

**Soap—**  
Bari, 159 cs. Wilson, Sons, & Co., Ltd.

**Starch—**  
Bremen, 1,512 cs. Veltmann & Co.

**Stearine—**  
Antwerp, 13 bgs.

**Tallow—**  
New York, 90 trcs. Wilson, Sons, & Co., Ltd.

**Tartaric Acid—**  
Rotterdam, 23 cks. Hutchinson & Son

**Treacle—**  
New York, 1,293 brls. Wilson, Sons, & Co., Ltd.

**Turpentine—**  
Trieste, 3 cs. Wilson, Sons, & Co., Ltd.

**Ultramarine—**  
Rotterdam, 4 cks. W. & C. L. Ringrose

**Varnish—**  
New York, 19 brls. Wilson, Sons, & Co., Ltd.

**Waste Salt—**  
Hamburg, 500 bgs.

**White Lead—**  
Rotterdam, 10 cks. W. & C. L. Ringrose

**Wood Pulp—**  
Rotterdam, 47 bls. Hutchinson & Son

**Hango,** 435 J. Good & Sons

**"** 80 Bailey & Leatham

**"** 40 Furley & Co.

**"** 141 W. Shiptone & Co.

**Zinc Ashes—**  
Antwerp, 1 ck. Bailey & Leatham

**Zinc White—**  
Rotterdam, 25 cks. Hutchinson & Son

## GLASGOW.

Week ending January 9th.

**Acetate of Lime—**  
New York, 220 bgs. Robertson, M'Intosh & Co.

**Alumina Sulphate—**  
Rotterdam, 30 cks. J. Rankine & Son

**Aniline—**  
Rotterdam, 2 cs. 4 cks. J. Rankine & Son

**Arachide Oil—**  
Rotterdam, 8 cks. J. Rankine & Son

**Asbestos—**  
Boston, 500 bgs.

**Barium Sulphate—**  
Antwerp, 300 bgs.  
Rotterdam, 100

**Barytes—**  
Rotterdam, 118 cks. J. Rankine & Son

**"** 103 pkgs.

**Boracic Acid—**  
Leghorn, 31 cs.

**Bromine—**  
Hamburg, 5 cs.

**Castor Oil—**  
Leghorn, 50 cs.  
Antwerp, 56 cks.

**Cellulose—**  
Rotterdam, 52 bgs.

**Chrome Ore—**  
Gulf of Macri, 2,030 t. J. & J. White

**Cottonseed Oil—**  
New York, 1 brl.

**Dyestuffs—**  
Allizarine  
Rotterdam, 96 pkgs.  
27 cks. 25 cs. J. Rankine & Son

**Extracts**  
Baltimore, 85 brls.

**Nantes,** 205 cks.

**New York,** 4

**Philadelphia,** 133

**Antwerp,** 2

**Madder**  
Rotterdam, 49 cks. J. Rankine & Son

**Farina—**  
Antwerp, 25 bgs.



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| <b>Glucose</b> —<br>Philadelphia, 50 brls.<br>New York, 150<br><b>Glue</b> —<br>Hamburg, 20 bgs. 7 cs.<br>Nantes, 60<br><b>Ochre</b> —<br>New York, 100 brls.<br><b>Paint</b> —<br>Philadelphia, 1 brl.<br><b>Painters' Colours</b> —<br>Antwerp, 4 cks.<br>Rotterdam, 47 pkgs.<br>" J. Rankine & Son<br><b>Paraffin Wax</b> —<br>Baltimore, 500 brls.<br><b>Potash</b> —<br>Rotterdam, 62 cks. J. Rankine & Son<br><b>Pyrites</b> —<br>Huelva, 1,802 t. Tharsis Co.<br>" 1,850<br><b>Rosin</b> —<br>Baltimore, 167 brls.<br>Charleston, 909 John Parker<br>Brunswick, G., 2,280<br>New York, 400<br><b>Soap</b> —<br>New York, 650 bks. 26 crts.<br>Rotterdam, 4 cs. J. Rankine & Son<br><b>Sodium Sulphate</b> —<br>Antwerp, 12 cks.<br><b>Starch</b> —<br>New York, 800 bxs.<br><b>Stearine</b> —<br>Rotterdam, 2 cks. J. Rankine & Son<br><b>Sulphur Chloride</b> —<br>Rotterdam, 14 blns. J. Rankine & Son<br><b>Tallow</b> —<br>New York, 50 tcs.<br>Boston, 40<br><b>Tartar</b> —<br>Bordeaux, 7 cks. | <b>Treacle</b> —<br>Philadelphia, 2,103 brls. Waddell & Bryson<br>Philadelphia, 600<br>Rotterdam, 1 ck. J. Rankine & Son<br><b>Tarpetine</b> —<br>Charleston, 1,000 brls. John Parker<br>Brunswick, G., 1,650<br><b>Ultramarine</b> —<br>Rotterdam, 1 ck. J. Rankine & Son<br><b>Varnish</b> —<br>New York, 30 brls.<br><b>White Lead</b> —<br>Rotterdam, 98 cks. J. Rankine & Son<br><b>Wood Pulp</b> —<br>Hamburg, 500 bls.<br>Christiania, 1,080<br><b>Zinc Ashes</b> —<br>Antwerp, 1 ck.<br><b>Zinc Oxide</b> —<br>New York, 100 brls.<br>Antwerp, 25 cks.<br><b>Zinc Sulphite</b> —<br>Rotterdam, 2 brls. J. Rankine & Son<br><b>Zinc White</b> —<br>Rotterdam, 180 cks. J. Rankine & Son<br><br><b>TYNE.</b><br>Week ending January 4th.<br><b>Alum Earth</b> —<br>Hamburg, 67 cks. Tyne S. S. Co.<br><b>Barium</b> —<br>Rotterdam, 330 bgs. Tyne S. S. Co.<br><b>Barytes</b> —<br>Hamburg, 12 cks. Tyne S. S. Co.<br>Rotterdam, 115 bgs. "<br><b>Colours</b> —<br>Hamburg, 14 cs. Tyne S. S. Co.<br>Rotterdam, 2 cks. " | <b>Glucose</b> —<br>New York, 50 brls. Furness, Withy, & Co.<br><b>Glue</b> —<br>Antwerp, 1 ck. Tyne S. S. Co.<br><b>Limestone</b> —<br>Trondhjem, 1 ck.<br><b>Potash</b> —<br>Hamburg, 3 cks. Tyne S. S. Co.<br><b>Pyrites</b> —<br>Huelva, 60 t.<br><b>Saltpetre</b> —<br>Hamburg, 40 cks. Tyne S. S. Co.<br><b>Soap</b> —<br>Rotterdam, 5 cs. Tyne S. S. Co.<br><b>Tallow</b> —<br>New York, 50 pkgs. Furness, Withy, & Co.<br><b>Wood Pulp</b> —<br>Christiania, 500 bis.<br><br><b>GOOLE.</b><br>Week ending January 1st.<br><b>Acetic Acid</b> —<br>Rotterdam, 2 cs.<br><b>Alkali</b> —<br>Calais, 3 cks.<br><b>Alum</b> —<br>Rotterdam, 60 bgs.<br><b>Aniline</b> —<br>Ghent, 7 kgs. 2 cs.<br><b>Caoutchouc</b> —<br>Boulogne, 9 cks.<br><b>Chemicals (otherwise undescribed)</b><br>Hamburg, 5 cs.<br><b>Colours</b> —<br>Hamburg, 4 cs.<br><b>Dyestuffs</b> —<br>Alizarine<br>Rotterdam, 114 cks. 2 cs.<br>Extracts<br>Rouen, 44 cks. | <b>Dyestuffs (otherwise undescribed)</b><br>Boulogne, 19 cks. 8 cs.<br>Rotterdam, 166 52<br><b>Farina</b> —<br>Hamburg, 300 bgs.<br><b>Glue</b> —<br>Rotterdam, 40 bgs.<br><b>Pitch</b> —<br>Rotterdam, 40 cks.<br><b>Potash</b> —<br>Dunkirk, 16 cks. 55 dms.<br>Calais, 32<br><b>Saltpetre</b> —<br>Antwerp, 85 bgs.<br><b>Ultramarine</b> —<br>Hamburg, 2 cs.<br><b>Yarnish</b> —<br>Boulogne, 1 pkge.<br><b>Waste Salt</b> —<br>Hamburg, 1,208 cks.<br><b>Wood Pulp</b> —<br>Rotterdam, 368 bls.<br>Hamburg, 342<br><br><b>GRIMSBY.</b><br>Week ending January 4th.<br><b>Albumen</b> —<br>Hamburg, 2 cks.<br><b>Barytes</b> —<br>Hamburg, 11 cks.<br><b>Caoutchouc</b> —<br>Rotterdam, 6 cs.<br>Antwerp, 4<br><b>Chemicals (otherwise undescribed)</b><br>Hamburg, 1 ck. 1 pkge.<br><b>Colours</b> —<br>Antwerp, 9 cks. 27 cs. 37 pkgs.<br>Hamburg, 2<br><b>Extracts</b> —<br>Dieppe, 12 cks.<br><b>Starch</b> —<br>Antwerp, 6 cs.<br><b>Wood Pulp</b> —<br>Malmo, 80 bls. |
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## EXPORTS OF CHEMICAL PRODUCTS

OF

## THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

## LONDON.

Week ending January 8th.

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
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| <b>Acid</b> —<br>Santos, 13 cs. £27<br>Natal, 16 33<br><b>Ammonia (Liquid)</b> —<br>Cadiz, 2 t. 3 c. £60<br><b>Ammonium Carbonate</b> —<br>Rouen, 2 t. 10 c. £82<br>Melbourne, 16 26<br><b>Ammonium Sulphate</b> —<br>Ostend, 25 t. £240<br>Demerara, 100 2 c. 937<br>Hamburg, 60 535<br>Trinidad, 8 18 81<br><b>Anhydrous Ammonia</b> —<br>Sydney, 50 cyldrs. £274<br><b>Bleaching Powder</b> —<br>Algoa Bay, 10 cs. £12<br><b>Boracic Acid</b> —<br>Wellington, 6 c. £9<br><b>Borax</b> —<br>Brisbane, 3 t. £60<br>Auckland, 10 c. 12<br>Sydney, 1 20<br><b>Caustic Soda</b> —<br>Melbourne, 3 t. 12 c. £74<br>Lyttelton, 5 2 37<br>Sydney, 20 184<br><b>Chemicals (otherwise undescribed)</b><br>Dunkirk, 4 t. 15 c. £60<br>Trepport, 11 8 475<br>Wellington, 7 kgs. 43<br>Nelson, 10 cs. 20<br>Hamburg, 5 3 258<br>Delagoa Bay, 1 15<br>Brisbane, 1 cs. 26 140 | <b>Citric Acid</b> —<br>Auckland, 2 kgs. £14<br>Rotterdam, 25 93<br>Algoa Bay, 10 cks. 4 c. 92<br><b>Coal Products</b> —<br>Alizarine<br>Reval, 6 cs. £318<br>Boston, 35 pks. 500<br><b>Anthracene</b><br>Dusseldorf, 112 cks. £750<br><b>Benzol</b><br>Rotterdam, 9 pipes 20 puns. £207<br><b>Carbolic Acid</b><br>Trepport, 40 cks. £260<br><b>Creosote Oil</b><br>Trinidad, 95 brls. £60<br><b>Naphtha</b><br>Boulogne, 4 cks. £25<br><b>Naphthaline</b><br>Hamburg, 16 cks. £60<br><b>Pitch</b><br>Paris, 12 pks. £18<br>Boston, 500 brls. 260<br>Alexandria, 450 152<br><b>Pitch and Tar</b><br>Melbourne, 115 pks. £28<br><b>Pyridine Bases</b><br>Hamburg, 7 drs. £250<br><b>Tar</b><br>Boston, 500 brls. £280<br><b>Toluol</b><br>Rotterdam, 50 runs. £160<br><b>Copper Sulphate</b> —<br>Marseilles, 75 t. £1,350<br><b>Cream of Tartar</b> —<br>Wellington, 1 t. 4 c. £113<br>E. London, 1 cs. 10<br>Sydney, 2 10 244<br><b>Disinfectants</b> —<br>Sydney, 16 c. £37<br>Hamburg, 25 cks. 125<br>Demerara, 3 cs. 13 |
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| Colombo, 30 pks. 91<br>Melbourne, 8 31<br>Cape Town, 15 575 348<br><b>Disinfectants and Borax</b> —<br>Algoa Bay, 20 pks. £52<br><b>Guano</b> —<br>Penang, 5 t. £50<br>Singapore, 5 90<br>Guadeloupe, 550 5,500<br><b>Manure</b> —<br>Cape Town, 18 t. £90<br>Landerneau, 300 3 c. 2,200<br>Trinidad, 20 7 200<br><b>Oxalic Acid</b> —<br>Yokohama, 10 c. £17<br><b>Potash Crystals</b> —<br>Oporto, 6 cks. £45<br><b>Potassium Chlorate</b> —<br>Bombay, 13 c. £31<br><b>Potassium Iodide</b> —<br>Cape Town, 1 cs. £26<br><b>Salt Cake</b> —<br>Antwerp, 145 t. £254<br><b>Saltpetre</b> —<br>Wellington, 10 c. £11<br>Launceston, 1 t. 24<br>Newcastle, 10 17<br>Melbourne, 3 10 82<br>Dunedin, 10 12<br>Sydney, 1 23<br><b>Sheep Dip</b> —<br>Cape Town, 5 t. 15 c. £120<br>Sydney, 10 drs. 10<br>B. Ayres, 6 8 135<br>E. London, 4 15 50 110<br>Dunedin, 4 cks. 134 200<br>Lyttelton, 150 200<br><b>Soda</b> —<br>Algoa Bay, 8 t. 10 c. £76<br>Perth, 5 5 | <b>Soda Ash</b> —<br>Lyttelton, 5 t. 3 c. £21<br><b>Soda Crystals</b> —<br>Newcastle, 50 t. 2 c. £117<br><b>Sodium Bicarbonate</b> —<br>Sydney, 1 t. £20<br>Hobart, 15 c. 8<br><b>Sodium Bisulphate</b> —<br>Demerara, 1 ck. £5<br><b>Sulphur</b> —<br>Algoa Bay, 40 cs. £33<br>Oporto, 150 brls. 104<br><b>Tartaric Acid</b> —<br>Wellington, 5 c. £32<br>Rockhampton, 2 13<br>Melbourne, 10 61<br>Algoa Bay, 6 36<br>Rangoon, 2 cs. 12<br>Sydney, 5 32<br>Pt. Elizabeth, 2 25<br><br><b>LIVERPOOL.</b><br>Week ending January 8th.<br><b>Albumen</b> —<br>New York, 2 t. 1 c. £183<br><b>Alum</b> —<br>Cape Town, 1 t. 7 c. 2 q. £7<br>Smyrna, 6 3 28<br>Calcutta, 63 5 2 317<br>Melbourne, 4 11 25<br>Singapore, 2 4 2 13<br><b>Ammonium Carbonate</b> —<br>Odessa, 3 t. 5 c. £114<br>Marseilles, 6 7<br>Vera Cruz, 1 18<br>Gijon, 1 10<br>Bilbao, 1 32<br>Barcelona, 1 33<br>Vera Cruz, 2 2 |
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**Ammonium Chloride—**

|                 |      |      |       |
|-----------------|------|------|-------|
| Hamburg,        | 1 t. | 3 q. | £18   |
| Valencia,       | 15   | 7 c. | 2 130 |
| Yokohama,       | 10   |      | 12    |
| Smyrna, 2 brls. |      |      | 28    |
| Naples,         | 1    | 5    | 47    |
| Malta,          |      | 4    | 8     |
| Philadelphia,   | 12   |      | 300   |
| Calcutta,       | 1    | 10   | 53    |
| Lisbon,         | 9    |      | 19    |
| Rotterdam,      |      | 5    | 8     |
| Genoa,          | 3    | 7    | 80    |

**Ammonium Sulphate—**

|               |        |       |            |
|---------------|--------|-------|------------|
| Newport News, | 250 t. | 15 c. | £2,504     |
| Portland, M., | 9      | 10    | 92         |
| Sourabaya,    | 306    | 5     | 3 q. 3,227 |
| Antwerp,      | 50     |       | 438        |
| Marseilles,   | 152    | 12    | 2 1,335    |
| Las Palmas,   | 51     | 13    | 450        |
| Valencia,     | 48     |       | 1 396      |
| Venice,       | 60     | 13    | 3 530      |
| Genoa,        | 48     | 3     | 1 420      |
| New York,     | 35     | 8     | 3 310      |

**Antimony—**

|            |      |  |  |
|------------|------|--|--|
| Rotterdam, | 4 c. |  |  |
|------------|------|--|--|

**Arsenic—**

|           |      |      |     |
|-----------|------|------|-----|
| B. Ayres, | 5 t. | 1 c. | £88 |
|-----------|------|------|-----|

**Bleaching Powder—**

|               |        |          |  |
|---------------|--------|----------|--|
| Alexandria,   | 3 cks. |          |  |
| Baltimore,    | 744    |          |  |
| Boston,       | 246    |          |  |
| Cape Town,    | 18     | 40 dms.  |  |
| Mexico,       |        | 50 brls. |  |
| Naples,       | 10     |          |  |
| Newport News, | 106    | 50       |  |
| New York,     | 107    |          |  |
| Rouen,        | 86     |          |  |

**Boric Acid—**

|               |       |      |       |
|---------------|-------|------|-------|
| Portland, M., | 16 c. | 2 q. | £26   |
| Rotterdam,    | 1 t.  |      | 30    |
| Yokohama,     | 5     | 10   | 2 157 |
| Wellington,   | 3     |      | 5     |

**Borax—**

|               |       |       |           |
|---------------|-------|-------|-----------|
| Stettin,      | 13 t. | 17 c. | 2 q. £256 |
| Vera Cruz,    | 1     | 12    | 1 31      |
| Antwerp,      | 1     | 16    | 37        |
| Halifax,      | 1     |       | 1 20      |
| Portland, M., | 4     | 16    | 1 98      |
| Odessa,       | 5     |       | 1 94      |
| Rotterdam,    | 15    | 7     | 2 313     |
| Valparaiso,   | 2     |       | 2 50      |
| Melbourne,    |       | 10    | 10        |
| Sydney,       | 1     |       | 21        |
| E. London,    | 1     | 10    | 15        |
| Yokohama,     | 6     | 18    | 129       |
| Kobe,         | 3     | 9     | 64        |
| Wellington,   |       | 5     | 5         |
| Hamburg,      |       | 10    | 10        |
| Barcelona,    | 12    | 8     | 2 249     |

**Calcium—**

|         |       |       |     |
|---------|-------|-------|-----|
| Odessa, | 17 t. | 13 c. | £40 |
|---------|-------|-------|-----|

**Calcium Chloride—**

|           |       |      |     |
|-----------|-------|------|-----|
| New York, | 10 t. | 4 c. | £21 |
| B. Ayres, | 1     | 5    | 3   |
| Odessa,   | 3     | 3    | 7   |

**Carbolic Acid—**

|            |      |       |     |
|------------|------|-------|-----|
| Dunkirk,   | 5 t. | 10 c. | £73 |
| Hong Kong, | 16   | 3 q.  | 17  |
| Hamburg,   | 19   |       | 61  |
| Vera Cruz, | 1    | 1 c.  | 3   |
| Calcutta,  | 4    | cs.   | 80  |

**Caustic Potash—**

|           |       |      |     |
|-----------|-------|------|-----|
| B. Ayres, | 15 c. | 2 q. | £15 |
| New York, | 8 t.  | 18   | 226 |

**Caustic Soda—**

|                |          |         |   |
|----------------|----------|---------|---|
| Barcelona,     | 280 dms. |         |   |
| Boston,        | 125      |         |   |
| Corinto,       | 16       |         |   |
| Fairwater,     | 105      |         |   |
| Genoa,         | 51       |         |   |
| Hamburg,       | 20       |         |   |
| Havana,        | 100      |         |   |
| Havre,         | 15       |         |   |
| Leghorn,       | 60       |         |   |
| Libau,         | 209      |         |   |
| Malaga,        |          | 56 cks. |   |
| Melbourne,     | 72       |         |   |
| Messina,       | 3        |         | 8 |
| Montreal,      | 100      |         |   |
| Naples,        | 30       |         |   |
| N. Orleans,    | 50       |         |   |
| New York,      | 200      |         |   |
| Oporto,        | 116      |         |   |
| Parahyba,      | 15       |         |   |
| Pernambuco,    | 100      |         |   |
| Samarang,      | 103      |         |   |
| San Sebastian, | 40       |         |   |
| Seville,       | 150      |         |   |
| Sydney,        | 30       |         |   |
| Valparaiso,    | 105      |         |   |
| Vera Cruz,     | 9        |         |   |

**Chemicals (otherwise undescrbed)**

|            |      |       |          |
|------------|------|-------|----------|
| Rotterdam, | 1 t. | 10 c. | £50      |
| Venice,    | 1    |       | 33       |
| Antwerp,   |      | 10    | 19       |
| Barcelona, |      | 6     | 11       |
| Hamburg,   |      | 10    | 18       |
| Kurrachee, |      | 18    | 31       |
| New York,  | 5    | 6     | 173      |
| Calcutta,  | 50   | 18    | 2 q. 204 |
| Boston,    | 14   | 16    | 3 90     |
| Genoa,     | 6    | 6     | 3 249    |
| Smyrna,    | 1    |       | 37       |

**China Clay—**

|               |          |          |  |
|---------------|----------|----------|--|
| Bombay,       | 5 cks.   |          |  |
| Boston,       | 859      | 197 bgs. |  |
| Colombo,      | 5 t.     |          |  |
| Philadelphia, | 332 cks. |          |  |

**Chloride of Lime—**

|            |      |  |     |
|------------|------|--|-----|
| Cape Town, | 1 t. |  | £18 |
|------------|------|--|-----|

**Citric Acid—**

|                  |      |  |    |
|------------------|------|--|----|
| Victoria, B. C., | 1 c. |  | £6 |
|------------------|------|--|----|

**Coal Products—**

|               |  |  |  |
|---------------|--|--|--|
| Aniline Salts |  |  |  |
|---------------|--|--|--|

|           |         |  |     |
|-----------|---------|--|-----|
| New York, | 12 cks. |  | £85 |
|-----------|---------|--|-----|

**Pitch**

|        |        |  |  |
|--------|--------|--|--|
| Cette, | 846 t. |  |  |
|--------|--------|--|--|

**Tar**

|          |          |  |  |
|----------|----------|--|--|
| Batavia, | 30 brls. |  |  |
|----------|----------|--|--|

|           |          |  |  |
|-----------|----------|--|--|
| Cheribon, | 10 rmls. |  |  |
|-----------|----------|--|--|

|         |         |  |  |
|---------|---------|--|--|
| Penang, | 50 cks. |  |  |
|---------|---------|--|--|

|               |         |  |  |
|---------------|---------|--|--|
| Sierra Leone, | 36 dms. |  |  |
|---------------|---------|--|--|

|            |    |  |  |
|------------|----|--|--|
| Singapore, | 50 |  |  |
|------------|----|--|--|

**Tar Salts**

|           |      |      |     |
|-----------|------|------|-----|
| New York, | 3 t. | 5 c. | £80 |
|-----------|------|------|-----|

**Copper Sulphate—**

|             |      |       |          |
|-------------|------|-------|----------|
| Venice,     | 2 t. | 11 c. | £38      |
| Vigo,       | 1    |       | 16       |
| Seville,    | 8    | 15    | 145      |
| Bordeaux,   | 21   | 1     | 1 q. 329 |
| Naples,     | 6    | 10    | 3 105    |
| Catania,    | 16   | 14    | 360      |
| Fremantle,  | 6    |       | 100      |
| Dunkirk,    | 9    | 19    | 1 154    |
| Vera Cruz,  | 2    | 10    | 38       |
| B. Ayres,   | 10   |       | 1 152    |
| Paris,      | 5    | 2     | 82       |
| Pernambuco, |      | 10    | 9        |
| Konigsberg, | 1    | 16    | 29       |
| Riga,       | 1    | 4     | 1 19     |
| Algiers,    | 27   | 9     | 3 445    |
| Gijon,      | 1    |       | 16       |
| Seville,    | 1    |       | 15       |
| Pisco,      | 2    | 8     | 38       |
| Cette,      | 64   | 18    | 2 1,040  |
| Brindisi,   | 4    | 18    | 98       |

**Disinfectants—**

|          |         |  |    |
|----------|---------|--|----|
| Rangoon, | 10 dms. |  | £9 |
|----------|---------|--|----|

**Dried Blood—**

|        |       |       |      |
|--------|-------|-------|------|
| Paris, | 25 t. | 11 c. | £192 |
|--------|-------|-------|------|

**Glue—**

|            |       |  |  |
|------------|-------|--|--|
| Mauritius, | 1 ck. |  |  |
|------------|-------|--|--|

**Gypsum—**

|           |       |      |      |
|-----------|-------|------|------|
| New York, | 74 t. | 7 c. | £200 |
|-----------|-------|------|------|

**Indigo Extract—**

|           |      |      |          |
|-----------|------|------|----------|
| New York, | 1 t. | 4 c. | 1 q. £42 |
|-----------|------|------|----------|

|         |   |    |      |
|---------|---|----|------|
| Boston, | 2 | 10 | 3 61 |
|---------|---|----|------|

**Iron Oxide—**

|             |       |       |          |
|-------------|-------|-------|----------|
| Valparaiso, | 32 t. | 13 c. | 3 q. £70 |
|-------------|-------|-------|----------|

|       |   |   |     |
|-------|---|---|-----|
| Para, | 3 | 2 | 3 8 |
|-------|---|---|-----|

|           |    |  |      |
|-----------|----|--|------|
| New York, | 11 |  | 3 56 |
|-----------|----|--|------|

**Lead Nitrate—**

|        |         |  |     |
|--------|---------|--|-----|
| Genoa, | 8 brls. |  | £65 |
|--------|---------|--|-----|

**Magnesium Carbonate—**

|         |      |  |      |
|---------|------|--|------|
| Bilbao, | 5 t. |  | £105 |
|---------|------|--|------|

**Magnesium Chloride—**

|        |      |       |    |
|--------|------|-------|----|
| Genoa, | 2 t. | 11 c. | £6 |
|--------|------|-------|----|

**Magnesium Sulphate—**

|        |      |      |    |
|--------|------|------|----|
| Gijon, | 1 t. | 2 c. | £5 |
|--------|------|------|----|

|       |         |  |  |
|-------|---------|--|--|
| Para, | 18 cks. |  |  |
|-------|---------|--|--|

**Manure—**

|             |      |       |          |
|-------------|------|-------|----------|
| Rouen,      | 4 t. | 13 c. | £44      |
| Las Palmas, | 31   |       | 164      |
| Gd. Canary, | 15   |       | 76       |
| Vancouver,  | 4    | 18    | 130      |
| Landerneau, | 193  | 18    | 3 q. 679 |
| Genoa,      | 98   | 10    | 282      |
| Venice,     | 394  | 1     | 3 1,182  |
| Valencia,   | 70   | 13    | 3 170    |

**Muriatic Acid—**

|         |      |  |    |
|---------|------|--|----|
| Manaos, | 1 t. |  | £9 |
|---------|------|--|----|

**Oxalic Acid—**

|         |      |      |           |
|---------|------|------|-----------|
| Boston, | 3 t. | 8 c. | 2 q. £110 |
|---------|------|------|-----------|

|            |   |   |     |
|------------|---|---|-----|
| Barcelona, | 5 | 2 | 168 |
|------------|---|---|-----|

**Paint—**

|             |         |         |    |
|-------------|---------|---------|----|
| Acapulco,   | 75 kgs. |         |    |
| Alexandria, |         | 5 brls. |    |
| Barcelona,  |         | 4 dms.  |    |
| Batavia,    |         | 5 cks.  |    |
| Calcutta,   | 200     |         | 12 |

|             |    |    |  |
|-------------|----|----|--|
| Colon,      | 5  |    |  |
| Gibraltar,  | 12 |    |  |
| Las Palmas, | 75 |    |  |
| Manila,     |    | 60 |  |
| Monrovia,   | 55 |    |  |
| Trieste,    | 15 |    |  |
| Valparaiso, | 20 |    |  |

**Painters' Colours—**

|                  |          |         |  |
|------------------|----------|---------|--|
| B. Ayres,        | 27 cks.  | 8 brls. |  |
| Cape Town,       | 18 cs.   | 4 pkgs. |  |
| Cartagena, N.G., | 10       | 20      |  |
| Iquitos,         |          | 10 kgs. |  |
| Malta,           | 12       |         |  |
| Manaos,          | 21       | 7       |  |
| New York,        | 30       |         |  |
| Rio de Janeiro,  | 9        |         |  |
| Rio del Rey,     |          | 20      |  |
| Sourabaya,       | 1        |         |  |
| Valparaiso,      |          | 41      |  |
| Victoria, V.I.,  | 40 brls. |         |  |

**Paraffin Scale—**

|         |         |  |  |
|---------|---------|--|--|
| Smyrna, | 15 bgs. |  |  |
|---------|---------|--|--|

**Phosphorus—**

|             |      |    |     |
|-------------|------|----|-----|
| Pernambuco, | 2 c. |    | £28 |
| Shanghai,   | 3 t. | 3  | 630 |
| Yokohama,   |      | 10 | 130 |
| Hiogo,      | 2    | 10 | 500 |

**Potassium Bicarbonate—**

|          |      |      |      |
|----------|------|------|------|
| Seville, | 2 t. | 4 c. | £102 |
|----------|------|------|------|

**Potassium Bichromate—**

|         |       |      |     |
|---------|-------|------|-----|
| Patras, | 10 c. | 1 q. | £22 |
|---------|-------|------|-----|

**Potassium Carbonate—**

|         |       |       |      |
|---------|-------|-------|------|
| Boston, | 17 t. | 15 c. | £326 |
|---------|-------|-------|------|

**Potassium Chlorate—**

|             |      |       |     |
|-------------|------|-------|-----|
| Melbourne,  | 2 t. |       | £80 |
| Pernambuco, | 2    |       | 80  |
| Stockholm,  | 10   |       | 372 |
| Genoa,      | 2    | 10 c. | 68  |
| Calcutta,   | 1    |       | 48  |
| M. Video,   | 1    | 10    | 55  |
| Hiogo,      | 22   | 10    | 861 |
| Shanghai,   | 1    | 10    | 60  |
| Lisbon,     | 10   |       | 20  |
| Rotterdam,  | 18   |       | 36  |
| Corunna,    | 1    |       | 39  |
| New York,   | 9    | 16    | 389 |

**Potassium Prussiate—**

|        |      |       |           |
|--------|------|-------|-----------|
| Malta, | 1 t. | 18 c. | 1 q. £140 |
|--------|------|-------|-----------|

|            |    |  |    |
|------------|----|--|----|
| Vera Cruz, | 13 |  | 47 |
|------------|----|--|----|

|         |   |  |    |
|---------|---|--|----|
| Naples, | 5 |  | 19 |
|---------|---|--|----|

**Potassium Stannate—**

|         |      |       |          |
|---------|------|-------|----------|
| Bombay, | 1 t. | 12 c. | 3 q. £88 |
|---------|------|-------|----------|

**Salt—**

|                   |        |       |        |
|-------------------|--------|-------|--------|
| Adelaide,         |        | 10 c. |        |
| Antwerp,          | 324 t. |       |        |
| Baltimore,        | 300    |       |        |
| Bangkok,          | 9      |       |        |
| Bayin,            | 25     |       |        |
| Benin,            | 6      |       |        |
| Boma,             | 5      |       |        |
| Bombay,           | 17     |       |        |
| Brass, W.C.A.,    | 105    |       |        |
| Brisbane,         | 350    |       |        |
| B. Ayres,         | 5      |       |        |
| Calcutta,         | 1,300  |       |        |
| Cape Lahou,       | 5      |       |        |
| Cape Town,        | 11     | 11    |        |
| Chama,            | 6      | 5     |        |
| Conakry,          | 50     |       |        |
| Copenhagen,       | 1,349  |       |        |
| E. London,        | 8      | 18    |        |
| Ghent,            | 657    |       |        |
| Iquique,          | 15     |       |        |
| Kingston, Jam.,   | 5      |       |        |
| Landana,          | 24     | 15    |        |
| Manila,           |        |       | 30 cs. |
| M. Video,         | 12     | 10    |        |
| Noqui,            | 22     | 6     |        |
| Pernambuco,       |        |       | 20     |
| Rio de Janeiro,   |        |       | 200    |
| Rotterdam,        | 420    |       |        |
| St. John's, N'd., | 10     |       |        |
| Sierra Leone,     | 300    |       |        |
| Sydney,           | 30     |       |        |
| Talcahuano,       | 1      | 12    |        |
| Valparaiso,       | 1      |       |        |
| Wellington, N.Z., | 5      |       |        |

**Salt Cake—**

|               |       |      |      |
|---------------|-------|------|------|
| Antwerp,      | 50 t. | 2 c. | £108 |
| Baltimore,    | 195   | 9    | 253  |
| Philadelphia, | 120   | 8    | 180  |

**Saltpetre—**

|         |      |       |          |
|---------|------|-------|----------|
| Callao, | 1 t. | 13 c. | 2 q. £39 |
|---------|------|-------|----------|

|             |   |    |     |
|-------------|---|----|-----|
| Valparaiso, | 7 | 10 | 163 |
|-------------|---|----|-----|

**Sheep Dip—**

|           |      |      |      |
|-----------|------|------|------|
| M. Video, | 7 t. | 5 c. | £163 |
|-----------|------|------|------|

**Soap—**

|            |          |  |  |
|------------|----------|--|--|
| Algoa Bay, | 200 bxs. |  |  |
| Antigua,   | 160      |  |  |
| Assinee,   | 25       |  |  |
| Attabo,    | 60       |  |  |
| Asim,      | 30       |  |  |

|            |    |  |  |
|------------|----|--|--|
| Baltimore, | 30 |  |  |
|------------|----|--|--|

||
||
||



|                        |    |                  |
|------------------------|----|------------------|
| Rotterdam,             | 47 | 45               |
| <b>Turpentine</b> —    |    |                  |
| Alexandria,            | 3  | 5 brls.          |
| Arecibo,               | 2  |                  |
| B. Ayres,              | 17 | dms.             |
| <b>Varnish</b> —       |    |                  |
| Rio de Janeiro,        | 2  | cs.              |
| <b>Zinc Chloride</b> — |    |                  |
| Antwerp,               | 1  | t. 5 c. 1 q. £16 |
| Bombay,                | 7  | 10 112           |

**MANCHESTER.**

Week ending January 5th.

|                                          |       |                  |
|------------------------------------------|-------|------------------|
| <b>Alkali</b> —                          |       |                  |
| Treport,                                 | 60    | kgs.             |
| <b>Chemicals</b> (otherwise undescribed) |       |                  |
| Barcelona,                               | 6     | cks. 5 cs.       |
| Rotterdam,                               | 13    |                  |
| Valencia,                                | 973   | bgs.             |
| <b>Coal Products</b> —                   |       |                  |
| <b>Aniline Colours</b>                   |       |                  |
| Hamburg,                                 | 4     | kgs.             |
| <b>Tar Oil</b>                           |       |                  |
| Antwerp,                                 | 10    | cks.             |
| Treport,                                 | 52    |                  |
| <b>Tar Salts</b>                         |       |                  |
| Hamburg,                                 | 31    | cks.             |
| Rotterdam,                               | 33    |                  |
| <b>Coal Products</b> (otherwise undes.)— |       |                  |
| Antwerp,                                 |       | £1,332           |
| Hamburg,                                 | 30    | dms.             |
| Rotterdam,                               | 12    | 17 cks. 25 brls. |
| Treport,                                 | 59    | 291 btl.         |
| <b>Dyestuffs</b> —                       |       |                  |
| <b>Allizarine</b>                        |       |                  |
| Rio de Janeiro,                          | 4     | kgs.             |
| <b>Extracts</b>                          |       |                  |
| Christiania,                             | 25    | cks.             |
| Barcelona,                               | 2     | cs.              |
| <b>Dyestuffs</b> (otherwise undescribed) |       |                  |
| Christiania,                             | 3     | cks.             |
| Barcelona,                               | 1     |                  |
| Hamburg,                                 | 1     | kg.              |
| <b>Manure</b> —                          |       |                  |
| Stettin,                                 | 166   | bgs.             |
| Valencia,                                | 1,127 |                  |
| <b>Painters' Colours</b> —               |       |                  |
| Hamburg,                                 | 1     | ck.              |
| <b>Starch</b> —                          |       |                  |
| Reval,                                   | 135   | bgs.             |
| <b>Tallow</b> —                          |       |                  |
| Rotterdam,                               | 4     | cks.             |
| <b>Varnish</b> —                         |       |                  |
| Barcelona,                               | 6     | cks.             |

**HULL.**

Week ending January 4th.

|                                          |        |                  |
|------------------------------------------|--------|------------------|
| <b>Alkali</b> —                          |        |                  |
| Stettin,                                 | 29     | cks.             |
| <b>Ammonium Sulphate</b> —               |        |                  |
| Dunkirk,                                 | 83     | bgs.             |
| Ghent,                                   | 236    |                  |
| New York,                                | 500    |                  |
| <b>Borax</b> —                           |        |                  |
| Antwerp,                                 | 2      | cks.             |
| Gothenburg,                              | 1      | cs.              |
| <b>Chemicals</b> (otherwise undes.)—     |        |                  |
| Antwerp,                                 | 10     | cks.             |
| Alexandria,                              | 100    |                  |
| Bordeaux,                                | 26     | cs.              |
| Copenhagen,                              | 10     |                  |
| Christiania,                             | 9      | 48 pks. 850 lbs. |
| Danzig,                                  | 8      | 58               |
| Gothenburg,                              | 7      | cs. 25 pkgs.     |
| Harlingen,                               | 23     | 1                |
| Konigsberg,                              | 1      | 5 pks.           |
| Libau,                                   | 1      |                  |
| New York,                                | 50     |                  |
| Rouen,                                   | 40     | 61               |
| Reval,                                   | 29     |                  |
| Rotterdam,                               | 1      | 78               |
| Riga,                                    | 20     |                  |
| Stettin,                                 | 4      |                  |
| Hamburg,                                 | 1      | 125 14 pkgs.     |
| <b>Cottonseed Oil</b> —                  |        |                  |
| Amsterdam,                               | 703    | c.               |
| Bremen,                                  | 7      |                  |
| Christiansand,                           | 18     |                  |
| Gothenburg,                              | 42     |                  |
| Hamburg,                                 | 144    |                  |
| Rotterdam,                               | 2,040  |                  |
| Stettin,                                 | 213    |                  |
| <b>Creosote</b> —                        |        |                  |
| Ghent,                                   | 31,874 | bgs.             |
| <b>Dyestuffs</b> (otherwise undescribed) |        |                  |
| Danzig,                                  | 4      | cks.             |
| Reval,                                   | 1      | cs.              |

|                            |     |             |
|----------------------------|-----|-------------|
| Rotterdam,                 | 7   |             |
| Riga,                      | 4   |             |
| Stettin,                   | 9   |             |
| <b>Glue</b> —              |     |             |
| Ghent,                     | 20  | bgs.        |
| New York,                  | 74  | cks.        |
| <b>Linseed Oil</b> —       |     |             |
| Amsterdam,                 | 103 | c.          |
| Antwerp,                   | 120 |             |
| Alexandria,                | 41  |             |
| Christiansand,             | 18  |             |
| Hamburg,                   | 139 |             |
| Rotterdam,                 | 52  |             |
| <b>Manure</b> —            |     |             |
| Rouen,                     | 10  | bgs.        |
| <b>Naphtha</b> —           |     |             |
| Ghent,                     | 12  | dms.        |
| <b>Painters' Colours</b> — |     |             |
| Amsterdam,                 | 27  | cks. 3 pks. |
| Antwerp,                   | 36  | 3 cs.       |
| Copenhagen,                | 2   |             |
| Christiania,               | 26  | 1           |
| Dunkirk,                   | 17  | 1 pkge.     |
| Hango,                     | 1   | 1           |
| Hamburg,                   | 7   | 1           |
| New York,                  | 55  | 170         |
| Rouen,                     | 1   |             |
| Rotterdam,                 | 5   | 22          |
| Riga,                      |     | 1           |
| Stettin,                   | 1   |             |
| <b>Pitch</b> —             |     |             |
| Antwerp,                   | 205 | t.          |
| Dunkirk,                   | 120 |             |
| <b>Soap</b> —              |     |             |
| Riga,                      | 1   | cs.         |
| <b>Starch</b> —            |     |             |
| Copenhagen,                | 120 | cs.         |
| <b>Tallow</b> —            |     |             |
| Amsterdam,                 | 16  | cks.        |
| Christiania,               | 3   |             |
| <b>Tar</b> —               |     |             |
| Amsterdam,                 | 5   | cks.        |
| Copenhagen,                | 20  |             |
| Danzig,                    | 5   |             |
| Gothenburg,                | 1   |             |
| Rotterdam,                 | 28  |             |
| <b>Varnish</b> —           |     |             |
| Copenhagen,                | 3   | cs.         |
| Danzig,                    | 1   | ck. 1       |
| Gothenburg,                | 2   | 1 ble       |
| Rotterdam,                 | 3   |             |
| Stettin,                   | 4   |             |

**GLASGOW.**

Week ending January 9th.

|                            |       |          |
|----------------------------|-------|----------|
| <b>Acetic Acid</b> —       |       |          |
| Bombay,                    | 652   |          |
| <b>Acids</b> —             |       |          |
| Madras,                    | 670   |          |
| U.S.A.,                    | 35    |          |
| <b>Albumen</b> —           |       |          |
| U.S.A.,                    | £288  |          |
| <b>Ammonium Sulphate</b> — |       |          |
| Cette,                     | 101   | t. 3½ c. |
| Cullera,                   |       |          |
| Valencia,                  | 50    | 15       |
| Hamburg,                   |       |          |
| <b>Anhydrous Ammonia</b> — |       |          |
| B. Ayres,                  | £250  |          |
| <b>Asbestos</b> —          |       |          |
| Bombay,                    | £44   |          |
| <b>Bleaching Powder</b> —  |       |          |
| Calcutta,                  | 40    | t. 19 c. |
| <b>Boracic Acid</b> —      |       |          |
| Yokohama,                  | £52   |          |
| <b>Caustic Soda</b> —      |       |          |
| B. Ayres,                  | 14    | t. 8½ c. |
| Rangoon,                   | 20    | 6½       |
| Seville,                   | 20    | 14½      |
| <b>Coal Products</b> —     |       |          |
| <b>Aniline Colours</b>     |       |          |
| U.S.A.,                    | £24   |          |
| <b>Aniline Salts</b>       |       |          |
| U.S.A.,                    | £196  |          |
| <b>Creosote Oil</b>        |       |          |
| France,                    | £400  |          |
| <b>Naphtha</b>             |       |          |
| Cette,                     | £135  |          |
| Dieppe,                    | 273   |          |
| Paris,                     | 205   |          |
| <b>Pitch</b>               |       |          |
| Cette,                     | £2418 |          |
| Bombay,                    | 32    |          |
| Leghorn,                   | 284   |          |
| Naples,                    | 875   |          |
| Dieppe,                    | 404   | t.       |
| Cadiz,                     | 475   |          |
| St. Nazaire,               | 380   |          |

|                               |        |             |
|-------------------------------|--------|-------------|
| <b>Tar</b>                    |        |             |
| Karachi,                      | £25    |             |
| Bombay,                       | 92     |             |
| Rangoon,                      | 100    |             |
| <b>Tar and Pitch</b>          |        |             |
| Bombay,                       | £236   |             |
| <b>Dyestuffs</b> —            |        |             |
| <b>Extracts</b>               |        |             |
| Boston,                       | £528   |             |
| <b>Logwood</b>                |        |             |
| Paris,                        | £45    |             |
| <b>Lead Nitrate</b> —         |        |             |
| Genoa,                        | 6      | c.          |
| <b>Linseed Oil</b> —          |        |             |
| Canada,                       | 4      | t. 6½ c.    |
| Trinidad,                     | 2      | 11½         |
| B. Ayres,                     | 2      | 14½         |
| Napier,                       | 1      |             |
| Hong Kong,                    | 4      | ½           |
| Rangoon,                      | 16     |             |
| Singapore,                    | 4      | 14½         |
| <b>Manure</b> —               |        |             |
| Valencia,                     | £2,500 |             |
| <b>Muriatic Acid</b> —        |        |             |
| Bombay,                       | £49    |             |
| <b>Nitric Acid</b> —          |        |             |
| Bombay,                       | £75    |             |
| Karachi,                      | 20     |             |
| <b>Paint</b> —                |        |             |
| Cape Town,                    | £30    |             |
| Rangoon,                      | 56     |             |
| <b>Painters' Colours</b> —    |        |             |
| Calcutta,                     | £474   |             |
| Bombay,                       | 485    |             |
| E. London,                    | 114    |             |
| Krugsdorf,                    | 53     |             |
| U.S.A.,                       | 145    |             |
| Hong Kong,                    | 81     |             |
| <b>Paraffin Wax</b> —         |        |             |
| Christiania,                  | £60    |             |
| Bordeaux,                     | 175    |             |
| Genoa,                        | 991    |             |
| Leghorn,                      | 189    |             |
| Naples,                       | 384    |             |
| Trieste,                      | 244    |             |
| Genoa,                        | 1      | t.          |
| Paris,                        | 24     |             |
| Rouen,                        | 136    |             |
| <b>Potassium Bichromate</b> — |        |             |
| Barcelona,                    | £172   |             |
| Hioho,                        | 961    |             |
| Bombay,                       | 45     |             |
| Bilbao,                       | 53     |             |
| Genoa,                        | 292    |             |
| Hioho,                        |        | 2 t. 10¼ c. |
| Rouen,                        | 682    |             |
| Yokohama,                     | 99     |             |
| <b>Potassium Prussiate</b> —  |        |             |
| Lyons,                        | 2      | t. 13½ c.   |
| Yokohama,                     | £38    |             |
| <b>Rosin Oil</b> —            |        |             |
| Rotterdam,                    | £50    |             |
| <b>Soap</b> —                 |        |             |
| Barcelona,                    | 4      | t. 2½ c.    |
| E. London,                    | 2      | 10          |
| Jamaica,                      | 2      | 1           |
| Bombay,                       | 4      | 3¼          |
| St. Denis,                    | 2      | 1           |
| <b>Sodium Bichromate</b> —    |        |             |
| Barcelona,                    | 1      | t. 1½ c.    |
| Genoa,                        | 8      | 13¼         |
| Rouen,                        | 41     | 7           |
| <b>Sodium Phosphate</b> —     |        |             |
| B. Ayres,                     | 2      | t. 14¼ c.   |
| <b>Sulphuric Acid</b> —       |        |             |
| Bombay,                       | £1,000 |             |
| Karachi,                      | 200    |             |
| M. Video,                     | 20     |             |
| Rangoon,                      | 306    |             |
| <b>Treacle</b> —              |        |             |
| Christiania,                  | 11     | t. 9 c.     |
| <b>Turpentine</b> —           |        |             |
| Calcutta,                     | £21    |             |
| <b>White Lead</b> —           |        |             |
| Calcutta,                     | £34    |             |

**TYNE.**

Week ending January 4th.

|                             |    |          |
|-----------------------------|----|----------|
| <b>Alkali</b> —             |    |          |
| Christiania,                | 2  | t. 19 c. |
| Rotterdam,                  | 3  | 19       |
| Gothenburg,                 | 2  | 10       |
| Reval,                      | 94 | 15       |
| <b>Ammonia</b> —            |    |          |
| San Francisco,              | 50 | t. 2 c.  |
| <b>Ammonia Salts</b> —      |    |          |
| Gothenburg,                 | 1  | t.       |
| <b>Ammonium Carbonate</b> — |    |          |
| Barcelona,                  | 2  | t. 10 c. |

|                            |    |          |
|----------------------------|----|----------|
| <b>Ammonium Chloride</b> — |    |          |
| Barcelona,                 | 1  | t. 1 c.  |
| <b>Antimony</b> —          |    |          |
| Hamburg,                   | 7  | t. 10 c. |
| Rotterdam,                 | 8  |          |
| <b>Asbestos</b> —          |    |          |
| Antwerp,                   | ½  | c.       |
| <b>Barium</b> —            |    |          |
| Rouen,                     | 20 | t. 4 c.  |
| <b>Bleaching Powder</b> —  |    |          |
| San Francisco,             | 30 | t.       |
| Konigsberg,                | 57 |          |
| Antwerp,                   | 20 | 12 c.    |
| Christiania,               | 26 | 7        |
| Copenhagen,                | 20 | 5        |
| Rotterdam,                 | 13 | 18       |
| Barcelona,                 | 10 | 2        |

**Caustic Soda**—

|                |     |          |
|----------------|-----|----------|
| San Francisco, | 43  | t. 10 c. |
| Genoa,         | 31  | 1        |
| Konigsberg,    | 5   | 18       |
| Antwerp,       | 4   | 18       |
| Hamburg,       | 7   | 10       |
| Copenhagen,    | 3   |          |
| Leghorn,       | 4   | 7        |
| Barcelona,     | 126 | 15       |

**Lamp Black**—

|        |    |    |
|--------|----|----|
| Genoa, | 14 | c. |
|--------|----|----|

**Litharge**—

|        |   |         |
|--------|---|---------|
| Rouen, | 1 | t. 3 c. |
|--------|---|---------|

**Magnesia**—

|            |    |    |
|------------|----|----|
| Antwerp,   | 2  | c. |
| Hamburg,   | 19 |    |
| Barcelona, | 6  | t. |

**Oxalic Acid**—

|            |   |         |
|------------|---|---------|
| Barcelona, | 7 | t. 2 c. |
|------------|---|---------|

**Slag**—

|            |    |    |
|------------|----|----|
| Rotterdam, | 77 | t. |
|------------|----|----|

**Soda**—

|                |    |      |
|----------------|----|------|
| San Francisco, | 43 | t. 2 |
| Drontheim,     | 41 | 12   |
| Antwerp,       | 25 |      |
| Hamburg,       | 43 |      |
| Christiania,   | 6  |      |
| Arendal,       | 10 |      |
| Leghorn,       | 2  | 17   |
| Rotterdam,     | 2  | 12   |
| Barcelona,     | 5  |      |
| Alexandria,    | 8  | 2    |
| Smyrna,        | 5  |      |
| Christiansund, | 5  |      |

**Soda Ash**—

|              |     |         |
|--------------|-----|---------|
| Konigsberg,  | 162 | t. 2 c. |
| Christiania, | 4   | 10      |
| Aalborg,     | 6   | 11      |
| Gothenburg,  | 45  |         |
| Smyrna,      | 13  | 2       |

**Sulphur**—

|             |    |    |
|-------------|----|----|
| Gothenburg, | 30 | t. |
|-------------|----|----|

**GOOLE.**

Week ending January 1st.

|                                          |     |               |
|------------------------------------------|-----|---------------|
| <b>Benzol</b> —                          |     |               |
| Rotterdam,                               | 47  | cks. 15 dms.  |
| <b>Chemicals</b> (otherwise undescribed) |     |               |
| Hamburg,                                 | 62  | cks.          |
| Rotterdam,                               | 1   |               |
| <b>Coal Products</b> (otherwise undes.)— |     |               |
| Boulogne,                                | 32  | cks.          |
| Ghent,                                   | 2   |               |
| Hamburg,                                 | 2   | cs.           |
| Rotterdam,                               | 62  |               |
| <b>Colours</b> —                         |     |               |
| Boulogne,                                | 5   | cks. 4 cs.    |
| Ghent,                                   | 8   |               |
| <b>Dyestuffs</b> (otherwise undescribed) |     |               |
| Hamburg,                                 | 11  | cks. 890 bgs. |
| <b>Manure</b> —                          |     |               |
| Rotterdam,                               | 261 | bgs.          |
| <b>Pitch</b> —                           |     |               |
| Dunkirk,                                 | 120 | t.            |
| Antwerp,                                 | 556 |               |

**GRIMSBY.**

Week ending January 4th.

|                                          |     |                  |
|------------------------------------------|-----|------------------|
| <b>Alkali</b> —                          |     |                  |
| Hamburg,                                 | 30  | cs.              |
| <b>Coal Products</b> (otherwise undes.)— |     |                  |
| Antwerp,                                 | 2   | cks.             |
| Dieppe,                                  | 125 |                  |
| Hamburg,                                 |     | 15 dms. 21 pkgs. |
| Rotterdam,                               | 2   |                  |
| <b>Colours</b> —                         |     |                  |
| Hamburg,                                 | 2   | cks.             |
| Rotterdam,                               | 1   |                  |



## PRICES CURRENT.

WEDNESDAY, JAN. 15TH, 1896.

PREPARED BY MESSRS. HIGGINBOTTOM AND CO., 116, PORTLAND STREET, MANCHESTER.

The values stated are F.O.R. at maker's works, or at usual ports of shipment in U.K. The price in different localities may vary.

## Acids:—

| Acids:—                                 |              | £    | s. | d.    |
|-----------------------------------------|--------------|------|----|-------|
| Acetic, 25 % and 40 % .. .. .           | per cwt.     | 6/   | &  | 9/-   |
| " Glacial .. .. .                       | "            |      |    | 40/-  |
| Arsenic S.G., 2000° .. .. .             | "            | 0    | 17 | 6     |
| Fluoric .. .. .                         | per lb.      | 0    | 0  | 3 3/4 |
| Muriatic (Tower Salts), 30° Tw. .. .. . | per bottle   | 0    | 0  | 10    |
| " (Cylinder), 30° Tw. .. .. .           | "            | 0    | 3  | 0     |
| Nitric 80° Tw. .. .. .                  | per lb.      | 0    | 0  | 1 3/4 |
| Nitrous .. .. .                         | "            | 0    | 0  | 1 3/4 |
| Oxalic .. .. .                          | nett         | 0    | 0  | 3 1/2 |
| Phosphoric, 1750° .. .. .               | "            | 0    | 1  | 1     |
| Picric .. .. .                          | "            | 0    | 0  | 10    |
| Sulphuric (fuming 50 %) .. .. .         | per ton      | 15   | 10 | 0     |
| " (monohydrate) .. .. .                 | "            | 5    | 10 | 0     |
| " (Pyrites, 168°) .. .. .               | "            | 3    | 0  | 0     |
| " " 150° .. .. .                        | "            | 1    | 5  | 0     |
| " (free from arsenic, 145°) .. .. .     | "            | 1    | 7  | 6     |
| Sulphurous (solution) S.G. 1025 .. .. . | "            | 3    | 0  | 0     |
| Tannic (pure) .. .. .                   | per lb.      | 0    | 1  | 0     |
| Tartaric .. .. .                        | "            | 0    | 1  | 1 1/2 |
| Arsenic, white powdered .. .. .         | nett per ton | 16   | 10 | 0     |
| Alum (loose lump) .. .. .               | "            | 4    | 12 | 6     |
| Alumina Sulphate (pure) .. .. .         | "            | 4    | 12 | 6     |
| Aluminoferic .. .. .                    | "            | 2    | 7  | 6     |
| Aluminium .. .. .                       | per lb.      | 0    | 2  | 10    |
| Ammonia, Anhydrous .. .. .              | "            | 0    | 1  | 3     |
| " 880=28° B. .. .. .                    | per lb.      | 0    | 0  | 3     |
| " =24° B. .. .. .                       | "            | 0    | 0  | 2 3/4 |
| " Carbonate .. .. .                     | nett         | "    | 0  | 0     |
| " Muriate .. .. .                       | per ton      | 22   | 15 | 0     |
| " " (sal-ammoniac) 1st & 2nd .. .. .    | per cwt.     | 39/- | &  | 37/-  |
| " Nitrate .. .. .                       | per ton      | 38   | 10 | 0     |
| " Phosphate .. .. .                     | per lb.      | 0    | 0  | 6 1/2 |
| " Sulphate (grey) London .. .. .        | per ton      | 8    | 10 | 0     |
| " " (grey) Hull .. .. .                 | "            | 8    | 10 | 0     |
| Aniline Oil (pure) .. .. .              | per lb.      | 0    | 0  | 8     |
| Aniline Salt .. .. .                    | "            | 0    | 0  | 7 1/2 |
| Antimony .. .. .                        | per ton      | 30   | 0  | 0     |
| " (tartar emetic) .. .. .               | per lb.      | 0    | 0  | 7 1/2 |
| " (golden sulphide) .. .. .             | "            | 0    | 0  | 10    |
| Barium Chloride .. .. .                 | per ton      | 6    | 7  | 6     |
| " Carbonate (native) .. .. .            | "            | 3    | 5  | 0     |
| " Sulphate (native levigated) .. .. .   | "            | 42/6 | to | 65/-  |
| Bleaching Powder, 35 % .. .. .          | nett         | "    | 7  | 0     |
| " Liquor, 7 % .. .. .                   | "            | 3    | 10 | 0     |
| Bisulphide of Carbon .. .. .            | "            | 12   | 10 | 0     |
| Chromium Acetate (crystal) .. .. .      | per lb.      | 0    | 0  | 6     |
| Calcium Chloride .. .. .                | per ton      | 2    | 2  | 6     |
| China Clay (at Runcorn) in bulk .. .. . | "            | 15/- | to | 30/-  |

## Coal Tar Products and Dyes:—

|                                            |               |          |    |    |        |
|--------------------------------------------|---------------|----------|----|----|--------|
| Alizarine (artificial) 20 % .. .. .        | nett          | per lb.  | 0  | 0  | 7 3/4  |
| Magenta .. .. .                            | "             | "        | 0  | 3  | 9      |
| Anthracene, 30 % A, f.o.b. London .. .. .  | per unit      | per cwt. | 0  | 0  | 11 1/2 |
| Benzol, 90 % .. .. .                       | per gallon    |          | 0  | 2  | 3      |
| " 50/90 .. .. .                            | "             |          | 0  | 2  | 0      |
| Carbolic Acid (crystallised 40") .. .. .   | per lb.       |          | 0  | 0  | 6 1/2  |
| " (crude 60") .. .. .                      | per gallon    |          | 0  | 1  | 9 1/2  |
| Creosote (ordinary) .. .. .                | "             |          | 0  | 0  | 1 1/2  |
| " (filtered for Lucigen light) .. .. .     | "             |          | 0  | 0  | 2      |
| Crude Naphtha 30 % @ 120° C. .. .. .       | "             |          | 0  | 0  | 10     |
| Grease Oils, 22° Tw. .. .. .               | per ton       |          | 2  | 10 | 0      |
| Pitch, f.o.b. Liverpool or Garston .. .. . | "             |          | 1  | 14 | 6      |
| Solvent Naphtha, 90 % at 160° .. .. .      | per gallon    |          | 0  | 1  | 6      |
| " Lucigen " and " Wells " Oils .. .. .     | "             |          | 0  | 0  | 2 1/2  |
| Mer .. .. .                                | per ton       |          | 41 | 7  | 6      |
| Copper Sulphate .. .. .                    | "             |          | 15 | 15 | 0      |
| " Oxide (copper scales) .. .. .            | "             |          | 41 | 10 | 0      |
| " Oxide (crude) .. .. .                    | "             |          | 37 | 10 | 0      |
| Allyl .. .. .                              | "             |          | 75 | 0  | 0      |
| " (distilled S.G. 1250") .. .. .           | nett, per oz. |          | 0  | 0  | 7 1/2  |
| " .. .. .                                  | per ton       |          | 1  | 5  | 0      |
| " .. .. .                                  | "             |          | 2  | 0  | 0      |
| " .. .. .                                  | "             |          | 12 | 10 | 0      |
| " .. .. .                                  | "             |          | 14 | 0  | 0      |
| " .. .. .                                  | "             |          | 21 | 10 | 0      |
| " .. .. .                                  | "             |          | 16 | 0  | 0      |
| " .. .. .                                  | "             |          | 16 | 0  | 0      |
| " .. .. .                                  | "             |          | 19 | 0  | 0      |

|                                         |             |              |    |    |    |
|-----------------------------------------|-------------|--------------|----|----|----|
| Lime, Acetate (brown) (ex ship)         | .. .. .     | per ton      | 5  | 5  | 0  |
| " " (grey) (ex ship)                    | .. .. .     | "            | 7  | 15 | 0  |
| Magnesium (ribbon and wire)             | .. .. .     | per oz.      | 0  | 2  | 3  |
| " Chloride (ex ship)                    | .. .. .     | per ton      | 2  | 7  | 6  |
| " Carbonate                             | .. .. .     | per cwt.     | 1  | 17 | 6  |
| " Hydrate                               | .. .. .     | per ton      | 17 | 0  | 0  |
| " Sulphate (Epsom Salts)                | .. .. .     | per ton      | 3  | 0  | 0  |
| Manganese, Sulphate                     | .. .. .     | "            | 17 | 0  | 0  |
| " Borate                                | .. .. .     | per cwt.     | 2  | 15 | 0  |
| " Ore, 70 %                             | .. .. .     | per ton      | 3  | 10 | 0  |
| Methylated Spirit, 61° O.F.             | .. .. .     | per gallon   | 0  | 1  | 9  |
| Naphtha (Wood), Solvent                 | .. .. .     | "            | 0  | 3  | 0  |
| " " Miscible, 60° O.F.                  | .. .. .     | "            | 0  | 2  | 11 |
| Oils:—                                  |             |              |    |    |    |
| Cotton-seed                             | .. .. .     | per ton      | 17 | 10 | 0  |
| Linseed                                 | .. .. .     | "            | 21 | 0  | 0  |
| Petroleum, American                     | .. .. .     | per gallon   | 0  | 0  | 7½ |
| Stearine                                | .. .. .     | per ton      | 24 | 10 | 0  |
| Phosphorus (yellow)                     | .. .. .     | per lb.      | 0  | 2  | 2  |
| " (red)                                 | .. .. .     | "            | 0  | 2  | 8  |
| Potassium (metal)                       | .. .. .     | per oz.      | 0  | 3  | 7  |
| " Bichromate                            | .. .. .     | nett per lb. | 0  | 0  | 4½ |
| " Carbonate, 90% (ex ship)              | .. .. .     | per ton      | 17 | 5  | 0  |
| " Chlorate                              | .. .. .     | per lb.      | 0  | 0  | 4½ |
| " Cyanide, 98%                          | .. .. .     | "            | 0  | 1  | 4  |
| " Hydrate (Caustic Potash) 90%          | .. .. .     | per ton      | 24 | 15 | 0  |
| " " (Caustic Potash) 75/80%             | .. .. .     | "            | 21 | 10 | 0  |
| " " (Caustic Potash) 70/75%             | .. .. .     | "            | 20 | 0  | 0  |
| " Nitrate (refined)                     | .. .. .     | per cwt.     | 1  | 1  | 6  |
| " Permanganate                          | .. .. .     | per cwt.     | 3  | 5  | 0  |
| " Prussiate Yellow                      | .. .. .     | per lb.      | 0  | 0  | 8  |
| " Sulphate, 90% (ex ship)               | .. .. .     | per ton      | 9  | 15 | 0  |
| " Muriate, 80% (do.)                    | .. .. .     | "            | 8  | 10 | 0  |
| Silver (metal)                          | .. .. .     | per oz.      | 0  | 2  | 6¾ |
| " Nitrate                               | .. .. .     | "            | 0  | 2  | 0  |
| Sodium (metal)                          | .. .. .     | per lb.      | 0  | 2  | 11 |
| " Carb. (refined Soda-ash) 48 %         | .. nett     | per ton      | 4  | 15 | 0  |
| " " (Caustic Soda-ash) 48 %             | .. .. .     | "            | 4  | 5  | 0  |
| " " (Carb. Soda-ash) 48%                | .. .. .     | "            | 4  | 0  | 0  |
| " " (Alkali) 58 %                       | .. .. .     | "            | 3  | 15 | 0  |
| " " (Soda Crystals)                     | .. .. .     | "            | 2  | 2  | 6  |
| " Acetate (ex-ship)                     | .. .. .     | "            | 14 | 0  | 0  |
| " Arseniate, 45 %                       | .. .. .     | "            | 12 | 0  | 0  |
| " Chlorate                              | .. .. .     | per lb.      | 0  | 0  | 6½ |
| " Borate (Borax)                        | .. .. .     | net, per ton | 19 | 0  | 0  |
| " Bichromate                            | .. .. .     | per lb.      | 0  | 0  | 3¾ |
| " Hydrate (77 % Caustic Soda) (f.o.b.)  | net pr. ton | "            | 9  | 7  | 6  |
| " " (74 % Caustic Soda)                 | "           | "            | 8  | 10 | 0  |
| " " (70 % Caustic Soda)                 | "           | "            | 7  | 10 | 0  |
| " " (60 % Caustic Soda)                 | "           | "            | 6  | 10 | 0  |
| " " (60 % Caustic Soda, cream) (f.o.b.) | "           | "            | 6  | 10 | 0  |
| " Bicarbonate                           | .. .. .     | "            | 6  | 10 | 0  |
| " Hyposulphite                          | .. .. .     | "            | 5  | 10 | 0  |
| " Manganate, 30%                        | .. .. .     | "            | 16 | 0  | 0  |
| " Nitrate (95 %) ex-ship Liverpool      | .. .. .     | per cwt.     | 0  | 7  | 6  |
| " Nitrite, 98 %                         | .. .. .     | per ton      | 30 | 0  | 0  |
| " Phosphate                             | .. .. .     | "            | 13 | 5  | 0  |
| " Silicate (glass)                      | .. .. .     | per ton      | 4  | 10 | 0  |
| " " (liquid, 100° Tw.)                  | .. .. .     | "            | 3  | 10 | 0  |
| " Stannate, 40 %                        | .. .. .     | per cwt.     | 3  | 2  | 9  |
| " Sulphate (Salt-cake)                  | .. .. .     | per ton      | 1  | 7  | 6  |
| " " (Glauber's Salts)                   | .. .. .     | "            | 1  | 10 | 0  |
| " Sulphide                              | .. .. .     | "            | 8  | 0  | 0  |
| " Sulphite                              | .. .. .     | "            | 5  | 5  | 0  |
| Strontium Hydrate, 100%                 | .. .. .     | "            | 8  | 10 | 0  |
| Sulphocyanide Ammonium, 95 %            | .. .. .     | per lb.      | 0  | 0  | 6¼ |
| " Barium, 95 %                          | .. .. .     | "            | 0  | 0  | 4¾ |
| " Potassium                             | .. .. .     | "            | 0  | 0  | 7  |
| Sulphur (Flowers)                       | .. .. .     | per ton      | 6  | 15 | 0  |
| " (Roll Brimstone)                      | .. .. .     | "            | 5  | 0  | 0  |
| " Brimstone: Best Quality               | .. .. .     | "            | 3  | 12 | 6  |
| Superphosphate of Lime (26%)            | .. .. .     | "            | 2  | 7  | 6  |
| Tallow                                  | .. .. .     | "            | 23 | 10 | 0  |
| Tin Crystals                            | .. .. .     | per lb.      | 0  | 0  | 5½ |
| " English Ingots                        | .. .. .     | per ton      | 62 | 10 | 0  |
| Zinc (Spelter)                          | .. .. .     | "            | 14 | 2  | 6  |
| " Chloride (solution, 100° Tw.)         | .. .. .     | "            | 5  | 5  | 0  |



# THE CHEMICAL TRADE JOURNAL

AND  
OIL, PAINT and COLOUR REVIEW.

Publishing Offices: 32, BLACKFRIARS STREET, MANCHESTER.

No. 453.

SATURDAY, JANUARY 25, 1896.

Vol. XVIII.

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## CURRENT TOPICS.

### COAL AND THE CHEMICAL TRADE.

IT is a generally recognised maxim that troubles never come singly, and the experience of the past year, as far as the chemical trade is concerned, fully justifies the truth of this statement. The Board of Trade returns for the past month have, however, shown a more satisfactory state of trade than has been known for some months, and even if it is scarcely wise to infer that trade will improve markedly, it is, nevertheless, very evident that it has passed the turning point, and is beginning to mend. It is, however, pretty certain that its full convalescence will not be accomplished without encountering some difficulties, the most formidable of which threatens to arise from the unsettled state of the coal trade. From the producers' point of view, although there has certainly been a distinct revival in the iron trade, there has likewise been increased competition in the contracts for gas and locomotive coals, with the result that prices have been "cut" severely, and in some cases, it would seem, unnecessarily. Further, the remarkable development of the Westphalian and other Continental coal-producing districts is, to say the least, by no means encouraging, as there is good reason to suppose that these districts will soon compete with us for the Baltic and northern trade. Such is the position of the producers, and it is one which will not cause them to look with favour on any proposition concerning increased wages.

To turn to the miners, they evidently hold strong opinions as to what they want, and what they think they are entitled to. To judge by the general attitude of the leaders of their Federation, it is highly probable that the 10 per cent. advance, arranged under the terms of the Conciliation Board, will be demanded, for ever since 1893 the Federation has fought persistently against any reduction of the 30 per cent. advance which was secured. If the additional 10 per cent. is insisted upon and conceded, the miners will again be receiving the full 40 per cent. which they once enjoyed, and the attainment of this seems to be their real object, no matter how their intentions may be cloaked. This opinion is strengthened by the fact that the recent ballot of the Durham miners resulted in a majority of 30,568 out of 45,462 in favour of withdrawal from the Conciliation Board; though, in considering the representativeness of this vote, it must be borne in mind that there were 20,000 neutrals.

Such is the general position of both sides, and it is needless to say anything on the attitude of the multifarious industries whose welfare depends upon a regular and fairly cheap supply of fuel.

Should the masters set their faces against any advance, relations will assuredly become very strained, and it will take very little to send us headlong into another coal strike. In anticipating such an event, it seems a very difficult task to

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## INDEX and TITLE PAGE for VOL. XVII.

WILL BE ISSUED WITH NO. 457, FEBRUARY 22, 1896.

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All communications for the *Chemical Trade Journal* should be addressed, and Cheques and Post Office Orders made payable to—

**DAVIS BROS., 32, Blackfriars Street, MANCHESTER.**

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Trade Advertisements, Announcements in the Directory Columns, and all Advertisements not prepaid, are charged at the Tariff rates, which will be forwarded on application.

Advertisements intended for insertion in the current week's issue should reach the office by Thursday morning at the latest.



say who ought to give way, and it is still more difficult when we remember that even after a very severe fight, arbitration was not abundantly successful in healing the rupture caused by the last strike. If anything, we are inclined to think that, since trade is really mending (and it cannot continue to do so if the coal strike intervenes), it would be incumbent upon the employers to think a long while before deciding to hold out for every tithe and tittle of their rights. The question is one that can hardly be judged by a precise consideration of rights and wrongs. There must be a good deal of give and take, and past experience has shown that the former has mostly to be practised by the employers. Yet up to now we do not think they have been losers by their forbearance.

With regard to the miner, there is one point we think it is desirable to emphasize. An inquiry has recently been made into the relative conditions of the British and Continental iron trades. There appear to be no startling revelations with regard to wages, which on the whole are much the same as they are at home, but particular stress is laid upon the character of the workmen themselves. There is a marked absence of the "slovenliness, noise, and idling about" that is all too characteristic of the British workman. Again, reference is made to the remarkably steady growth of the iron industry in Germany. As the report says, "this may of course be due to the greater steadiness of trade, but it may also be due to the more steady-going character of the workmen employed." Employés in this country will do well to lay to heart the covert insinuation which these words convey. If they do so, and, in their own interests, act up to the hint which is given, we feel sure they will likewise find many of our somewhat languishing industries improving, in the same way as those on the Continent, which are now causing so much discomfiture by the competition they are creating.

#### THE RAND OUTPUT IN 1895.

The production of gold in the Rand has reached the total that was foretold, but how deeply the latest developments in the Transvaal have affected the gold industry the figures for the month only too clearly show. They also indicate how in anticipating the achievement of a certain end it is desirable to leave a wide margin for contingencies.

In taking note of the total production it must be remembered that the returns are exclusive of the output of the New Chimes and Kleinfontein Companies. Without these the past year shows an increased production of 253,486 ounces, the actual total being 2,277,635, while the corresponding figures for preceding years are given elsewhere in this issue. The total for the month shows that it was a safe prediction to say the year's increase would be a quarter of a million ounces, for not only is the total for December the smallest in the year, with the exception of January and February, but for the first time in the year the total was lower than that for the same month in 1894 by 3,676 ounces. Taking the average of the six months, June to November, as representing the production for December under ordinary conditions, the total of the year would have been greater by nearly 20,000 ounces. Naturally there will be some anxiety as to the show the present month will make, and for our own part we are prepared to see rather tame returns for the first quarter of the year.

#### THE BITER BIT.

An amusing case was recently heard before the Brentford magistrates, involving the question of whether in selling Seidlitz Powders, chemists are bound to adhere to the formula prescribed in the British Pharmacopœia. Since the Pharmaceutical Society has been very actively waging war

against grocers and unregistered chemists for selling scheduled poisons in sheep dips, patent medicines and similar familiar articles, it is somewhat amusing to find the tables turned, and the County Council prosecuting a chemist, under the Food and Drugs Act, for not supplying a drug, namely a Seidlitz Powder, of the nature, substance and quality of the article demanded.

A good deal of interesting evidence was given on both sides, and it seems that while not conforming with the requirements of the P. B., the error has been making the Seidlitz powders too strong. It was clearly shown that almost all chemists sell two qualities, one of which is in strict accordance with the P. B., while the other is made of any strength that fancy may dictate, but generally stronger rather than weaker. This latter point was made much of on behalf of the defence, it being stated that customers were always asked which quality they required, the ordinary or the best. The Bench, however, thought a good deal of doubt seemed to be attached to the meaning of the word "best." It did not mean necessarily the strongest, and they therefore gave a conviction with a small fine, allowing time, however, for the defendants to decide if they would appeal.

### LOW TEMPERATURE RESEARCHES.

BY H. GRIME.

(Concluded from page 19.)

IN a paper published in the *Philosophical Magazine* for July Dewar and Fleming give a preliminary notice of some investigations of the thermo-electric powers of metals and alloys between the temperature of the boiling-point of water and that of liquid air, that is, over practically the same range as covered by the experiments on resistances. Thermo-electric power is defined thus:—"If one junction of a thermo-electric couple is at a temperature  $t^{\circ}$ , and if the two junctions of the couple differ in temperature by a very small interval  $d t$ , and if the electromotive force of the couple under these conditions is  $d E$ , then the thermo-electric power of the couple at the temperature  $t^{\circ}$  is equal to the

ratio  $\frac{d E}{d t^{\circ}}$  Professor Tait showed that on certain assumptions the curves representing thermo-electric powers plotted as a function of the temperature should be straight lines, and that, therefore, the lines of thermo-electromotive force in a thermo-electric couple of two metals, one junction of which is kept at a constant temperature whilst the temperature of the other junction is raised, should be parabolas with their axes vertical, if plotted in terms of the variable temperature as abscissae. Tait experimentally proved the correctness of his speculations for a number of thermo-electric couples at temperatures within the range of the mercury thermometer. But he found that the thermo-electric lines of certain metals, notably of the magnetic metals, nickel and iron, are, for temperatures above  $0^{\circ} \text{C}$ , broken lines characterised by sudden changes of direction. Dewar and Fleming have extended Tait's observations, and have published their results in the form of a chart showing by curves the electromotive forces in C. G. S. units, of a couple formed of pure lead and some other metal or an alloy, the temperature of one junction of the couple being kept at  $0^{\circ}$ , and the other being caused to vary. They purpose giving the curves for thermo-electric powers in a subsequent paper. In the meantime they point out that none of the curves are true parabolas over their whole extent. Many, indeed, are curves of double curvature, and in some cases point to the existence of more than one neutral point with lead. The lines of iron and steel have changes of curvature at certain points, which indicate that the thermo-electric lines are broken lines. The Bismuth line is very peculiar; there is a sudden break at about  $-80^{\circ}$ . Incidentally it was found that the thermo-electric value of Hadfield's 12 per cent. manganese steel differed according as it was non-magnetic or rendered magnetic by being heated to a full red heat.

We have now considered some mechanical, chemical, optical, thermal, magnetic and electrical properties. It remains to say a few words about the influence of low temperatures on living organisms. Inasmuch as chemical activity is so much diminished, it is only to be expected that life processes will receive a severe check. It is found that intensely cold bodies are as destructive of human tissues as very hot bodies. Pictet states that one day he accidentally received two wounds on the same hand—one produced by liquid air, the other by fire. The latter healed in ten or twelve days; the cold-burn was still open six months afterwards. In the case of the more serious cold-



burns "the skin is rapidly detached, and all the parts reached by the cold behave like foreign bodies. A long and stubborn suppuration sets in, which does not seem to accelerate the reconstitution of the tissues. The wounds are always malignant, and scar very slowly, and in a manner different from burns produced by fire." It is a fortunate circumstance for workers in this field that the layer of vapour formed between very cold liquids or solids and warmer bodies, hinders close contact. In order to try the effect of radiation in dry, cold air, M. Pictet held his bare arm up to elbow in a refrigerating vessel maintained at  $-105^{\circ}$ , of course without touching the metallic surface. "A strange sensation was experienced over the whole skin and throughout the muscles. It was not disagreeable at first, but gradually became decidedly so, and appeared to have its seat in the central bone or periosteum. After three or four minutes the skin was rather blue, and the pain became more intense and deep-seated. On withdrawing the arm at the end of ten minutes a strong reaction was experienced, accompanied by a superficial inflammation." He tried similar experiments with several animals. A dog was placed in a copper receiver cooled down to  $-90^{\circ}$ . "In the first ten minutes its temperature, instead of falling, rose by about half a degree. On further exposure, however, the extremities became cold, but it was not until after about 90 minutes that the body temperature fell. Then followed a point at which the struggle for existence was given up; the temperature fell rapidly, and the animal died suddenly." As for lower organisms, it was found that insects resist a cold of  $-28^{\circ}$  but not of  $-35^{\circ}$ . Snails are not killed by temperatures down to  $-120^{\circ}$ . Frog's spawn bears a temperature of  $-60^{\circ}$ , and silkworm eggs a temperature of  $-40^{\circ}$ , but eggs of birds are said to lose their vitality at  $-2^{\circ}$  or  $-3^{\circ}$ . According to Pictet, "our secret friends and foes" are not destroyed by a temperature so low as  $-213^{\circ}$ . Professor McKendrick submitted blood, milk, flesh, and such like substances in sealed glass tubes for one hour to  $-181^{\circ}$ , and then kept them at blood heat for some days. When the tubes were opened the various substances were all found to be putrid. Seeds also withstood the action of this low temperature.

It is not necessary here to vindicate the time, energy, and money spent in low-temperature research. Still it may be pointed out that already these researches have borne practical fruit. Within the last twenty years the artificial production of cold has become an important industry. Some hundreds of patents have been taken out in connection therewith. Frozen meat has become a common article of commerce, and at least one important city has erected large cold air stores. Discoveries of the physicist and chemist have furnished the mining engineer and the builder with new resources. News of a recent instance of this comes from New York. Owing to the swampy character of the surroundings great difficulty was experienced in the preparation of a foundation for the retaining wall of a new speedway at High Bridge. A row of 4-inch pipes, closed at the ends, were sunk to a depth of 40 feet. Smaller pipes, open at the bottom, were placed inside these, and cold air at a temperature of  $-45^{\circ}$  forced along them. By this means the mud and wet sand were frozen, and no longer flowed into the excavation. Some years ago Pictet opened a laboratory specially devised for low-temperature research at Berlin. In that laboratory experiments have been carried on not only of, apparently, merely scientific interest, but also of immediate practical importance. For example, Paalzow has determined the elasticity of solid mercury by freezing the metal in the form of a tuning-fork; and Cognac was endowed with all the mellowness of old age by a short course of treatment at  $-200^{\circ}$ . Sulphurous ether was quickly purified by successive freezings. And by the simple process of fractional crystallization at low temperatures a sample of chloroform was obtained, which was unaltered by exposure to light. More important still it was found that the use of such purified chloroform was not attended by the dangers which seem to accompany the use of ordinary chloroform as an anæsthetic. I have already referred to the growing commercial importance of liquid gases. Jules Verne and Lord Playfair have speculated on the probable use of liquid carbon dioxide or sulphur dioxide in time of war. Whether they ever play any part in the victories of war or not, we may safely predict an important place for liquid gases in the still greater victories of peace. And, considering the great progress made in low-temperature research during the last twenty years, it seems not too much to hope and expect that another twenty years will make the bounds of freedom wider yet, and enable physicists to study matter not merely *near*, but *at* what is now called the absolute zero of temperature.

**FIRE AT A CHEMICAL FACTORY.**—About eleven o'clock on last Saturday night the Salford Fire Brigade was summoned to the works of Messrs. Hervey, Peek, and Hervey, manufacturing chemists, Ordsal-lane, Salford. It was found that the gum stores in the drying mill were on fire, but Mr. Bentley and his men were able in a short time to put out the flames. The fire was confined to the part of the building in which it began. It is understood that the cause of the outbreak was the overheating of a stove.

## GOLD PRODUCTION IN THE RAND DURING 1895.

THE total output from the Rand district during December amounts to 178,428 oz., and shows a decrease of 16,790 oz. as compared with the previous month's total. The following table gives the monthly returns since the beginning of 1891:—

|             | 1891.<br>oz. | 1892.<br>oz. | 1893.<br>oz. | 1894.<br>oz. | 1895.<br>oz. |
|-------------|--------------|--------------|--------------|--------------|--------------|
| January.... | 53,205       | 84,560       | 108,374      | 149,814      | 177,463      |
| February..  | 50,079       | 86,649       | 93,252       | 151,870      | 169,295      |
| March....   | 52,949       | 93,244       | 111,474      | 165,372      | 184,945      |
| April....   | 56,372       | 95,562       | 112,053      | 168,745      | 186,323      |
| May.....    | 54,673       | 99,436       | 116,911      | 169,773      | 194,580      |
| June.....   | 55,864       | 103,252      | 122,907      | 168,162      | 200,941      |
| July.....   | 54,924       | 101,280      | 126,169      | 167,953      | 199,453      |
| August....  | 59,070       | 102,322      | 136,069      | 174,977      | 203,573      |
| September.  | 65,602       | 107,852      | 129,585      | 176,707      | 194,764      |
| October..   | 72,793       | 112,167      | 136,682      | 173,378      | 192,652      |
| November..  | 73,394       | 106,795      | 138,640      | 175,304      | 195,218      |
| December..  | 80,313       | 117,749      | 146,357      | 182,104      | 178,428      |
| Total ..    | 729,238      | 1,210,868    | 1,478,473    | 2,024,159    | 2,277,635    |

## ARGON AND HELIUM.

AT the Royal Institution last week a large audience assembled to hear Lord Rayleigh give some further particulars about argon. Sir Frederick Abel was in the chair, and among those present were Sir Benjamin Baker, Sir James Crichton-Browne, Sir Douglas Galton, Professor Dewar, Professor A. B. W. Kennedy, Professor Ramsay, Dr. Frankland, Professor D. E. Hughes, Mr. Thorncroft, Professor S. P. Thompson, Professor Roberts-Austen, and Professor Vernon Boys.

Lord Rayleigh first dealt with the density of argon. At the meeting last year he had, he said, only been able to speak of the density of argon prepared by the magnesium method. It was at that time his aim to weigh argon prepared by the oxygen method, and it was important to do so in view of the question whether argon prepared by the magnesium method was the same gas as that obtained by the oxygen process. He mentioned the difficulties he had to meet in getting three litres of argon, the amount with which he had been accustomed to work in his determinations of the densities of other gases. These difficulties were mainly due to the slow rate at which the nitrogen could be eliminated by means of the electric spark. He described the improvement he had effected in his apparatus at the suggestion of Professor Ramsay. The nitrous fumes formed in the process were absorbed by alkali, and Professor Ramsay's suggestion was to produce a fountain of alkali in the vessel, and so expose a larger surface for absorption of the gases. Another advantage gained was that the alkali solution welling up protected the glass from the heat of the flame. The voltage employed was about 3,000. In this arrangement nitrogen and oxygen were combined at the rate of about seven litres an hour. One curious effect was noted. Though the fountain made it quite possible to use a large arc in a small vessel, yet it was found that, everything else being equal, in these circumstances the rate of absorption was very much reduced. The determination ultimately made by Lord Rayleigh of the density of argon prepared in this apparatus was 19.940, which almost exactly equalled that found by Professor Ramsay for the gas obtained by the magnesium process. This fact allowed the inference that the gases prepared by the two processes were identical, and also suggested, though it did not prove, that the gas was not a mixture. It was also unfavourable to the view supported by some eminent chemists that argon was an allotropic form of nitrogen, since the weight of that modification should be 21. Lord Rayleigh then spoke of the refractive index of argon, and after giving some account of the method he employed in estimating it, stated it to be .96, air being taken as 1. From the fact that the refractivities of air and argon were so nearly alike it might again be inferred that argon was not the allotropic form of nitrogen represented by  $N_2$ , ordinary nitrogen being  $N_2$ . Passing to his examination of the gas given off by the Bath springs, he said the proportion of argon appeared to be less than existed in the air. Subsequently, however, Professor Ramsay discovered helium, and then it occurred to him as an explanation of this that helium, being as inert as argon, might be present in the residue, and by its lightness compensate for the heaviness of the argon. He found the line  $D_3$ , too, unmistakably in the spectrum of the residue of this Bath gas, and that showed the presence of helium; he did not, however, consider it was present in sufficient quantities to make the explanation just suggested tenable. In gas from springs at Buxton there was some 2 per cent. of argon, with a doubtful indication of helium. The question whether there was helium in the atmosphere was an interesting one, but experiments seemed to show that there was not one part in 10,000 of air. It must, however, be present in a mathematical sense, seeing that it was given off by certain springs. Lord Rayleigh concluded his lecture by some remarks on the viscosity of argon, which he found to be 1.21 as compared with air.



## Official Memoranda.

(From the Board of Trade Journal.)

### CUSTOMS TARIFF OF NEW ZEALAND.

|                                                                            |          | Rate of Duty |
|----------------------------------------------------------------------------|----------|--------------|
|                                                                            |          | £ s. d.      |
| Salt (except Rock) .....                                                   | per ton. | 0 10 0       |
| Treacle and Molasses .....                                                 | per lb.  | 0 0 0½       |
| Acetic Acid (n.o.e.) not above 30 % .....                                  | "        | 0 0 1½       |
| Do. for every additional 10 % .....                                        | "        | 0 0 0½       |
| Tartaric Acid .....                                                        | "        | 0 0 1        |
| Chemicals (n.o.e.) including photo chemicals and glacial Acetic Acid ..... | —        | 20% ad val.  |
| Cream of Tartar .....                                                      | per lb.  | 0 0 1        |
| Glycerine, Refined .....                                                   | —        | 20% ad val.  |
| Soda, Carbonate and Bicarbonate .....                                      | per cwt. | 0 1 0        |
| Soda Crystals .....                                                        | "        | 0 2 0        |

### THE ASBESTOS INDUSTRY OF CANADA FOR 1894.

According to the "Bolletino di Notizie Commerciali," the production of Canadian asbestos in 1894 amounted to about 8,600 tons. This figure shows a decided increase on the preceding year, and the export of the mineral proves that the demand for raw asbestos is greater than it has been for the past three years.

The Quebec Central Railway carried 7,318 tons of asbestos last year, an amount only exceeded in 1891, when it reached 7,774 tons.

Eight companies for the mining of asbestos were working in 1894, employing altogether about 800 men and boys.

About 1,000 tons were sent to the United States; the rest to various parts of Europe.

All exportations were made direct to manufacturers, and not, as before, to middlemen or agents.

The proprietors of the mines have adopted a system of only extracting enough of the mineral to carry out the contracts of their customers, so that there is now no danger of a glut in the market.

The value of the amount produced last year is roughly calculated at £100,000.

### PAPER MILLS IN INDIA.

According to information received from the India Office, there are ten paper mills—four in the Bombay Presidency, four in Bengal, one at Lucknow, and one at Gwalior, which was worked for a short time only in the past year and then closed. Of the ten, three are private concerns in the Bombay Presidency, one of which has not been at work for many years. The others have an aggregate nominal capital of Rs. 612,200. The fibrous materials used for making paper are chiefly rags, babui and moonj grasses, straw, jute and hemp cuttings, and old jute bags and cloth. The quality of the papers made is now very good, and they have a large and increasing sale. Most of the white and blue foolscap, and much of the blotting paper, note paper, and envelopes used in the Government offices is now obtained from the Indian mills. The total quantity of paper made in 1894 was about 34½ million lbs.; ten years previously it was about 13 million lbs. The value of the out-turn in 1894 is reported at over Rs. 500,000. The number of persons employed is 3,544.

There are a number of small paper works, for the manufacture of what is known as country paper, scattered through most provinces, but of these petty industries no statistical information is available.

### THE RAPID ESTIMATION OF INSOLUBLE PHOSPHATE.

BY VINCENT EDWARDS, F.C.S.

THERE can be no doubt that the estimation of both "soluble" and "insoluble" phosphates in manures is best effected by weight, but at times, when results are required without delay, the volumetric method by means of uranium acetate is extremely useful, and with precautions good results can be obtained, especially with superphosphates and dissolved guanos. This applies, however, more to the "soluble" determination than the "insoluble." In the latter case various substances become dissolved and render the end-reaction with ferrocyanide obscure, and the results therefore untrustworthy. Though I would certainly not advocate the substitution of any volumetric process for the usual gravimetric one, I made a few experiments to ascertain, as a matter of interest, the most suitable conditions under which the "insoluble" phosphate in manures can be estimated by titration with solution of uranium acetate, and venture to submit as the most satisfactory the following:—

I take a small quantity of the well-mixed sample, about 0.5 grm., and exhaust with cold and hot water, collect the undissolved matter as

usual on a small Swedish filter-paper, washing till the filtrate coming through is no longer acid. The residue is then washed off the filter-paper with hot water into a small beaker, and treated with a very small quantity of HCl and boiled on a sandbath for a short time. The hot solution is then run through the same filter into a larger beaker, the sand washed, and the filtrate diluted to 300 c.c., ammonia added till alkaline, and afterwards acetic acid till just acid. The smaller the amount of HCl AmHO and  $\text{H}_2\text{C}_2\text{H}_3\text{O}_2$  employed the better. The beaker is then carefully finished, a deep colour being taken as the end-mark. The results by this method may be a trifle low, but with care will be found very near those by weight. The dilution greatly increases the accuracy of the method, and it is possible that a weaker solution of uranium might be also used with advantage for the "insolubles" than the ordinary one (1 c.c. 0.01 grm.  $\text{Ca}_3\text{P}_2\text{O}_8$ ), and I intend to try some experiments on this point.

Works' chemists, who are often called on to furnish rapid results for home use, will do well to try this plan. I need scarcely say the uranium must be standardised under the same conditions as the titrations are made.

### PRESERVING IRON WITH PAINT.

IN a paper read before the Engineers' Club, of Philadelphia, Messrs. E. A. Custer and F. P. Smith point out how experiments have demonstrated that bright iron does not rust when exposed to a dry atmosphere of pure oxygen and carbonic acid gas, separate or mixed. After the rust has once commenced, only the slightest trace of moisture is necessary to continue this chemical action, which is probably due not only to the corroding influence of the rust already present, but also to its power of absorbing oxygen and condensing moisture. Any covering that is absolutely impervious to moisture will, when applied to clean iron, prevent rust under atmospheric conditions in which corrosive elements are wanting. The protective covering that is to meet these conditions must be cheap and easily applied; and a paint or combination of paints seems to be the logical solution of the problem involved.

The requisites of a good paint for the preservation of iron and steel are stated by Mr. Woodruff Jones to be these: (1) It should firmly adhere to the surface, and not chip or peel off. (2) It must not corrode the iron, otherwise the remedy may only aggravate the disease. (3) It must form a surface hard enough to resist frictional influences, yet elastic enough to conform to expansion and contraction of the metal by heat and cold. (4) It must be impervious to, and unaffected by, moisture and atmospheric and other influences to which it may be exposed.

In undertaking to produce a paint with the above requirements that would absolutely protect iron, it was early determined that the covering should consist of two distinct elements, the first of which should possess the adhesive and elastic properties, and afford a safe and elastic base for the application of a second coating that would be hard, elastic, acid proof, and absolutely impervious to moisture. There is no paint known that will meet the first requirement so fully as good red lead and linseed oil. The dry film of red lead and linseed oil, however, is porous; and this defect must be remedied by a second coating of paint, which will dry with an absolutely impervious and waterproof surface.

It has been justly claimed for red lead that the property it possesses of saponifying the oil—not oxidising it, in its true sense—renders it one of the most valuable pigments for a first coating on structural iron. After numerous experiments, a vehicle was finally selected as affording the nearest approach to an ideal covering for ironwork. The pigment was next considered, and it was decided that this must itself be inert so far as iron is concerned; for while it was intended to be used over a foundation coat of red lead, it should be possible to employ it in some cases as a sole protective covering. A material was incorporated in the pigment which enables it to resist frictional action in the highest degree, and makes it practically impossible to destroy and, to all intents and purposes, absolutely insoluble in any of the known solvents.

One important point that must be carefully considered when the protection of iron is desired is the presence of mill scale or iron rust. No paint, however good, is worth anything for the protection of iron when used over mill scale. The absolute removal of mill scale from the iron before it is painted should therefore be specified and insisted upon. In ordinary practice it has been found sufficient to brush the surface of the iron carefully and thoroughly with a good wire brush, and then apply the paint.

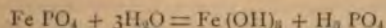
Attention was called to the quality of the paint to firmly adhere to the surface of iron when subjected to very high or low temperatures; and some specimens of pipe were exhibited that were first coated when cold with the protective paint referred to, then subjected to live steam at a temperature of 340°, then painted while hot with the same preparation, and afterwards dipped in a mixture of ice and salt until thoroughly chilled.



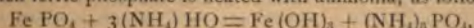
## SOCIETY OF CHEMICAL INDUSTRY.

## NOTTINGHAM SECTION.

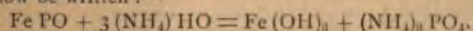
THE usual monthly meeting of the above section was held on Wednesday evening, the 8th inst., at University College, Nottingham, Mr. F. J. R. Carulla being in the chair. Mr. R. M. Caven read a paper on "Some Properties of Ferric Phosphate," in which he described a number of discoveries in regard to the behaviour of this compound with other bodies. One that throws some light on certain discrepancies that are met with in the analysis of ferric phosphate is its hydrolysis by means of hot water in accordance with the following formula:—



The author also attended to the already known reaction which occurs when ferric phosphate is heated with ammonia, as follows:—



and stated that he had discovered the process to be reversible, so that it could now be written:—



Mr. Caven pointed out that it is worthy of notice that the reaction he had found out was the more easy of the two to bring about, for, as the ammonia evaporated as it was found, the mass of  $(\text{NH}_4)_3\text{PO}_4$  present in the solution rapidly diminished, and greatly facilitated the combination of the iron with the phosphoric acid. The paper, which was illustrated by numerous experiments, was discussed by Mr. Wood, Mr. Meggitt, and the chairman.

Mr. J. T. Wood (the hon. secretary) then exhibited a simple process of silvering glass, showing a splendid 10-inch telescope disc, which he had prepared only the day before. Mr. Wood explained that the process had been described and perfected by the Rev. C. L. Tweedale, so that he could not claim it as original; but the subject of thin mirror films having recently come before the society, he hoped a practical illustration might prove interesting. Mr. Wood took a solution of silver nitrate, strength 1 gram to 20 c.c., to which strong ammonia was added until the precipitate that formed just re-dissolved. A solution of potash was next added, the amount of potash being of exactly the same weight as the silver. The precipitate formed by this new addition was again dissolved by strong ammonia, but not quite absolutely, nitrate of silver being then added till the liquid had a straw colour, or the colour of weak tea. The glass to be silvered was placed horizontally in a shallow dish, and so supported as to be raised, say, half-an-inch from the bottom. Distilled water was poured into the dish until it reached the glass and completely covered the lower surface, viz., the one to be silvered. The glass having been raised out of the way, the silver solution as above prepared was poured into the water, and well stirred with a glass rod. Some solution of pure dextrose was then added, and well stirred in, the glass to be silvered being then replaced. The dextrose slowly reduced the silver to the metallic state, and a most perfect mirror was produced in less than 15 minutes.

Although Mr. Wood was careful to explain the necessity of using pure chemicals, he also proved how this can on occasions be dispensed with by readiness of resource. After the addition of the potash, the presence of silver chloride was very manifest, so that, before proceeding, the precaution was taken to filter the solution. Venus herself could not have wished for a more perfect mirror.

The next meeting is being arranged to take place at Derby on February 5th.

## SCOTTISH SECTION.

The third meeting of the session was held on the evening of Tuesday, the 14th, in the rooms of the society, Bath-street, Glasgow. Dr. John Clark, the chairman of the section, presided. The attendance was of a distressingly attenuated character. The first business was the disposal of the paper read in Edinburgh a month ago, on behalf of Mr. R. Tervet, F.C.S., London, in which some new theories connected with "destructive distillation" were put forth, and the discussion with regard to which had been adjourned. Mr. J. Stanley Muir, the secretary, as the only member present at the preceding meeting, briefly sketched the course of the first section of the discussion. The paper, he said, proved to be very closely technical in character, so much so that those who took part in the discussion did so more as merely interested in the working processes of coal and shale distillation than as inquiries into chemical research, and that because of that the aim of the paper had to some extent missed its mark. When Mr. Stanley Muir concluded his *resumé* of the Edinburgh incidents, Dr. Clark at some length criticised the paper (previously in type, and proofs supplied to members), and the matter was then closed by a vote of thanks to Mr. Tervet, there being no other member who desired to say anything. The remaining business was a paper by Mr. W. Carrick Anderson, M.A., B.Sc., entitled, "A method of obtaining the specific gravity and porosity of coke," and detailing

means he had devised with a view to shortening and simplifying the process hitherto in vogue. After defining the old methods, the paper drew a comparison between the results obtained by these and the results obtained by the new formulae, claiming that by the change the time expended could be reduced from 36 hours to 3½ hours without any detriment to accuracy. Mr. Anderson, in the course of the reading, described a new form of "volumenometer," designed by himself and Mr. J. Stanley Muir, by means of which the specific gravity of solid bodies, whether lighter or heavier than water, could be quickly measured. This new "volumenometer" was exhibited to the meeting, Mr. Anderson explaining that by combining the figures showing apparent specific gravity obtained by means of the new apparatus with the real specific gravity result, the porosity of coke might be accurately deduced. The paper, which proved to be most interesting in character, was well worthy of a larger audience.

## IMPORTS AND EXPORTS FOR DECEMBER.

ACCORDING to the Board of Trade returns for last month things are fairly satisfactory. In the imports there have been larger amounts of petroleum, lubricants, and tallow. The exports of alkali show a falling off in both quantity and value, but there has been a decided increase in soap.

## IMPORTS OF FOREIGN AND COLONIAL PRODUCE.

| ARTICLES.                    | Quantities.      |            |
|------------------------------|------------------|------------|
|                              | 1894.            | 1895.      |
| Margarine .....              | Cwt. 90,447      | 87,884     |
| Copper Ore and Regulus ..... | Tons. 14,228     | 17,930     |
| Pyrites .....                | " 53,077         | 54,022     |
| Tin .....                    | Cwt. 45,331      | 86,065     |
| Alkali .....                 | " 22,114         | 13,109     |
| Brimstone .....              | " 14,370         | 24,938     |
| Dyes, Coal Tar .....         | L. 60,125        | 59,992     |
| Saltpetre .....              | Cwt. 26,531      | 18,239     |
| Petroleum .....              | Gall. 14,085,381 | 17,706,755 |
| Turpentine .....             | Cwt. 67,490      | 51,881     |
| Guano .....                  | Tons. 482        | 1,718      |
| Nitrate of Soda .....        | " 2,530          | 3,352      |
| Paraffin .....               | " 60,597         | 55,902     |
| Rosin .....                  | Cwt. 133,156     | 66,891     |
| Tallow and Stearine .....    | " 111,265        | 191,883    |
| Oil Seed Cake .....          | Tons. 26,727     | 29,916     |
| Wood Pulp .....              | " 24,722         | 34,789     |

## EXPORTS OF BRITISH AND IRISH MANUFACTURES.

| ARTICLES.               | Quantities.   |           |
|-------------------------|---------------|-----------|
|                         | 1894.         | 1895.     |
| Alkali .....            | Cwt. 571,121  | 500,273   |
| Cement .....            | Tons. 22,302  | 28,168    |
| Coal and Coke .....     | " 2,637,604   | 2,468,392 |
| Copper, all kinds ..... | Cwt. 90,042   | 128,897   |
| Iron and Steel .....    | Tons. 199,984 | 220,579   |
| Chemical Manures .....  | " 20,413      | 19,987    |
| Oils, seed .....        | " 4,460       | 3,614     |
| Salt .....              | " 60,512      | 48,713    |

THE ADULTERATION OF PALM OIL.—At the last meeting of the Liverpool Chamber of Commerce, Mr. J. H. Jackson gave notice that at the next meeting of the committee he would draw the attention of the committee to the subject of the adulteration of produce, especially palm oil and kernels, coming from the oil rivers, and would move a resolution in favour of the issue of Governmental regulations by the Protectorate authorities dealing with the matter.

INJUDICIOUS ADVERTISING.—A "Nervous Old Lady" writes as follows to a London paper to protest indignantly against what seems the latest development of the advertising craze:—"Imagine my dismay last night at being suddenly awakened by a maid, who stood at my bedside with a telegram, lighted a candle, and immediately disappeared. I tore open the envelope; but, alas, without spectacles I could see nothing. I got up in an agony of suspense—having relations in the Transvaal—hunted all over the room for my glasses, and when at length I found them, what do you suppose I read? 'Peter Robinson's sale now proceeding.' Now, sir, I ask you is it not abominable that one should not only be followed from country house to country house by the puffs of wine merchants and coal merchants, but that one should actually be pursued by telegraphic advertisements forwarded by one's servants to the postal (not the telegraphic) address, so that one has to pay miles of portage, and they do not arrive till late at night?"



## The Patent List.

*This list is compiled from Official sources in the Manchester Technical Laboratory, under the immediate supervision of George E. Davis and Alfred R. Davis, who report professionally upon the value of Chemical Patents.*

### APPLICATIONS FOR ENGLISH LETTERS PATENT.

Storing and Purifying Acetylene and like Gases. J. C. Bayley. 320. January 6.  
 Manufacture of Caustic and Carbonate of Soda, and Sulphide of Soda. H. R. Angel. 315. January 6.  
 Separating Cyanogen Compounds from Gas Liquor, etc. H. Bower. 361. January 6.  
 Manufacture of Acetylene Gas. A. Garton. 395. January 7.  
 Smoke Cleansing Apparatus. J. Nemecek and F. W. Keitsch. 425. Jan. 7.  
 Smoke Consuming. W. Smith and T. Lockwood. 527. January 8.  
 Artificial Musk. C. J. Caspers. 525. January 8.  
 Improved Process of Manufacturing Chlorine Gas. J. B. Hilliard. 579. January 9.  
 Stopping and Discharging Device applicable to Carboys. H. J. Gardiner. 647. January 9.  
 Artificial Fuel. H. C. B. Forester. 682. January 10.  
 Obtaining Sulphate of Soda, Hydrogen Sulphide, and Calcium Sulphate from Sulphide of Soda or Calcium Residues and Mono or Bisulphate of Soda. B. Willcox. 720. January 10.  
 Apparatus for Revivifying Spent Limes, etc. G. R. Hislop. 759. Jan. 11.

### ABSTRACTS OF LATEST COMPLETE SPECIFICATIONS.

*These abstracts are specially prepared for the Chemical Trade Journal and ALL RIGHTS of publication are RESERVED. This is the earliest series of abstracts of Chemical and allied patents accessible to the public.*

Method of, and Apparatus for Effecting Electrolysis. Dr. C. Kellner, IX. Wasagasse, No. 29, Vienna. Eng. Pat. 24,541. December 17, 1891.

To avoid the difficulty of maintaining an even distribution of mercury over a large horizontal surface, a vertical arrangement is described. It virtually consists of a channel fashioned in helical form round a close-ended stoneware cylinder, the coils of the helix being so arranged that they alternately pass from the outer to the inner side of the cylinder by means of a slit in the latter. A cylindrical anode (which also acts as a store for the solid compound being treated, and with which the strength of the electrolyte is maintained) is placed inside the stoneware cylinder, and connected to the positive pole of the generator. The whole is surrounded by an outer vessel containing the solvent for the cathion. The stream of mercury is connected at various points to the negative pole of the dynamo. In connection with the electrolysis of salt, for instance, the *modus operandi* is as follows:—Salt having been placed inside the anode to fortify the electrolyte which the stoneware cylinder already contains, mercury is run into the topmost inner channel attached thereto. As soon as the circuit is completed the salt is decomposed, forming an amalgam, and flows into the second helical convolution situated on the outside of the cylinder, where, in contact with water, the amalgam is decomposed, and the mercury returning to the third convolution, which is inside, the process begins *de novo*. Escape pipes are provided for the chlorine evolved in the inside of the stoneware chamber, and the hydrogen given off when the amalgam is in contact with water. There are in all eleven drawings, an alternative arrangement better suited to large-scale working being described.

Improvements in Apparatus for Softening and Purifying Water. H. T. Wright, 16, Great George-street, Westminster. Eng. Pat. 3,360. February 15, 1895.

Provision is made for softening water under pressure, without need of further pumping. Part of the water is passed to a tank, in which the chemical precipitating reagents are dissolved, the water as it discharges from the supply pipe actuating a water wheel, which drives a shaft with a stirrer attached. The mixture of water and reagent is then passed up a large cylindrical vessel fitted with inclined baffle plates, which collect the sludge. The clarified water flows away at the top into store tanks, being passed through a filter first, if desirable. There are six drawings.

A Process for Chemically Cleansing Wool and Woollen Fabrics and Rags. E. Lasbordes, of Castres (Tarn), France. Eng. Pat. 3,390. February 19, 1895.

The object is to so treat the wool chemically, as to enable the carbonising process to be effected at a comparatively low temperature. The wool is first passed through a bath of panama wood or hawthorn. It is thus scoured, and also coated with a layer that protects the wool in the acid bath. The latter is prepared by adding enough grey plaster of Paris to 13° or 15° B sulphuric acid, to ensure the removal of all traces of nitric acid, which colour the wool yellow. The solution so obtained is diluted to about 2·5° B. If the wool is very bad 4° or 5° B

will be weak enough. A certain amount of sulphurous acid and bisulphite of soda is also added, and the wool steeped in the acid bath thus prepared. After such treatment, the carbonisation can be effected at 35° to 50° C., the sulphurous acid being oxidised, thereby completing the action of the acid bath. After carbonising the wool is again passed through a bath of panama wood or weak carbonate of soda, which brightens it. Hydrochloric acid can be used instead of sulphuric. The proportions for preparing the baths are given throughout.

Improvements in the Process of Extracting Oil from Vegetable Seed. H. T. C. Kraus, 43, Ralph-street, Brooklyn, U.S.A. Eng. Pat. 27,107. Oct. 25th, 1895.

The seeds after being crushed are passed into a long trough, through which water circulates. The husks are thus floated off, while the kernels sink to the bottom, and are passed by an agitating device to a shoot at the end of a trough. The kernels are then worked in an agitator into a pulp, and run into a heater, where the volatile portions of the seeds escape, and are collected. This product is refined by subsequent distillation, by means of the indirect action of super-heated steam. The products of the distillation are passed through a separator which retains the oily matters, but allows the aqueous portions to pass on to be condensed. There are seventeen drawings in all, many of which are sectional drawings of details.

## THE FERRATES.

BY C. A. O. ROSELL.

IN the course of a paper on this subject the author refers to the question, "Who has first seen ferric acid?" which forms the title of a controversial article in the "J. Prakt. Chem.," wherein is stated that G. E. Stahl discovered that when saltpetre is ignited with iron and the mass is added to water, the caustic alkali resulting from the decomposition of the saltpetre holds a part of the iron in solution and produces an amethyst or purple colour. He also stated that if dilute solutions of iron in nitric acid are poured in successive small portions into a strong solution of caustic potash the iron is dissolved on shaking, with a blood red colour.

While verifying the accuracy of the former (says the author) I have not been able to reproduce the latter of these reactions. On its face it looks so improbable that it must be believed that the statement is erroneous. Probably the nitric acid that Stahl used contained sufficient hydrochloric acid to make the reaction possible. Be this as it may, certain it is that the direction given by Stahl for making potassium ferrate in the dry way, through the ignition of saltpetre with iron, is sufficiently clear to be successfully followed, so that he is undoubtedly entitled to the credit of being the discoverer of ferric acid.

As recently as in Muir and Morley's edition of Watt's Dictionary of Chemistry, page 547, it is stated that "Stahl noticed in 1702 that a violet solution is obtained by fusing iron with saltpetre and washing with water or by adding a solution of iron in HNO<sub>3</sub> to conc. KOH aq.," which shows that these two editors had nowhere found a correction of the erroneous statement of Stahl, nor has a correction been published by any one until now.

In 1802 potassium ferrate was rediscovered by Ekeberg, while fusing gadolinite, which is a silicate of yttrium, beryllium, and iron, with caustic potash. In this experiment the ferric oxide, of which the gadolinite contains 16 per cent., was oxidized in the presence of caustic potash so as to form potassium ferrate. However, neither Stahl nor Ekeberg examined the character of the iron compound which resulted from the reaction with the caustic potash, either added or produced in the process, and which gave rise to the claret colour observed.

When Fremy undertook an investigation of those compounds of the metallic oxides, in which the latter play the part of acid metallic anhydrides, he very soon rediscovered the solution of ferric oxide in caustic potash. In this solution he found that the oxide did not exist as ordinary ferric oxide, Fe<sub>2</sub>O<sub>3</sub>, but that it contained more oxygen than the latter, the quantity of oxygen contained corresponding roughly, or as closely as it was possible to analytically determine the constitution of an impure and somewhat variable body, such as barium ferrate, to the formula FeO<sub>3</sub>, a result which has since been confirmed by J. Denham Smith and H. Rose.

The accounts of Fremy's work were published from time to time in a number of scientific periodicals, commencing with January, 1841, when he states that the compound of oxide of iron and potash which is soluble in water corresponds in composition to the manganates, and in 1842 the new compound was called by him ferric acid, though the name had already been suggested by J. Denham Smith in Phil. Mag. Ser.

Besides producing potassium ferrate by the methods of Stahl and Ekeberg, which were unknown to him, Fremy also obtained it by electrolyzing caustic potash with an anode of cast iron and also by introducing chlorine into a solution of caustic potash containing ferric hydroxide in suspension. In addition he produced this salt by heating iron with potassium dioxide.



In attempting to produce sodium ferrate by such processes as Stahl and Ekeberg had used to produce potassium ferrate he failed. Not only did Fremy fail in his attempts to produce sodium ferrate in the dry way, but there is not to be found in the literature of the subject any account of anybody else who has succeeded in doing so or who has ever suggested the possibility of its being accomplished. In fact, the statement occurs in chemical literature that sodium ferrate cannot be made except in the wet way. Thus in Wurtz' "Dictionnaire de Chimie," Volume I., part 2, page 1413, the following is found: "Sodium ferrate is soluble in water and cannot be prepared except in the wet way."

Bloxam prepared a solution of sodium ferrate by adding bromine to a strong solution of caustic soda containing ferric hydroxide in suspension. This I have found a very quick and convenient method of producing a small quantity of a solution of sodium ferrate. I have also several times made the attempt to produce sodium ferrate by the addition of iodine to a solution of caustic soda holding ferric hydroxide in suspension, but no sodium ferrate was formed.

Bloxam also found that a solution of calcium ferrate may be produced by gently heating a solution of bleaching powder with a small portion of ferric chloride. On repeating this experiment I have found the process to be a very delicate one, and that it often fails, although, if very carefully conducted a rose-red solution of calcium ferrate is formed. I thought that perhaps by the addition of lime to the bleaching powder solution the reaction might take place more expeditiously. Such, however, was not the case, as a solution of calcium ferrate could never be produced when lime was first added to the bleaching-powder solution containing a small portion of ferric hydroxide in suspension.

It was first stated by Fremy, and it has subsequently been repeated in the text-books, that calcium ferrate, like barium ferrate, is insoluble in water. The experiment of Bloxam above referred to shows that this statement is not correct.

On preparing a solution of sodium or potassium ferrate allowing it to stand, it sometimes changes colour from red to green. J. Denham Smith believed this green solution to be caused by some new iron compound, but Heinrich Rose showed that it was derived from manganese. The ferrate solution prepared contained a manganate. On standing, the ferrate decomposed while the manganate remained unchanged until at last only manganate remained, when the solution turned green. I have repeatedly verified the correctness of Rose's explanation.

In undertaking a course of investigation of the properties of ferric acid the following interesting problems presented themselves:

1. Production of sodium ferrate in the dry way.
2. Production of iron dioxide.
3. Decomposition of barium ferrate by metathesis so as to obtain in this way a normal ferrate containing no free alkaline hydroxide.
4. Determination of the constitution of the thioferrates.

#### PRODUCTION OF SODIUM FERRATE IN THE DRY WAY.

In the attempts to produce sodium ferrate in the dry way, ferric oxide, both dry and hydrated, was calcined with caustic soda, sodium carbonate, sodium nitrate, and with mixtures of sodium hydroxide and nitrate, and also with sodium nitrate and carbonate, but all in vain. The substitution of sodium chlorate for a part or all of the sodium nitrate was also tried, but with no change in the result. Sodium dioxide was then tried, but at first without success. It was, however, observed that when the fused mass from this last experiment had been allowed to cool, on subsequent addition of water it became highly heated, and it was suspected that while sodium ferrate had been produced by the reaction, that it was at the same time decomposed by the heat, resulting from the addition of the water, and it was believed that if this rise in temperature could be obviated the decomposition of the ferrate might be prevented. This theory was acted on, and the mass resulting from the fusion of the ferric oxide and the sodium dioxide was treated with ice, and though some rise in temperature still followed it was much less than before, and sodium ferrate was obtained in solution. Thus the first problem had been successfully solved, and sodium ferrate was for the first time produced in the dry way. There are two probable reasons why Fremy failed. In the first place, when using sodium nitrate this was to a great extent decomposed by the heat leaving behind sodium nitrite which is stable at high temperatures, and which, when the mass was dissolved in water served as a reducing agent, reducing the iron trioxide to the ordinary ferric oxide, while the nitrite itself, by oxidation, became converted into nitrate. When using caustic soda the cause of the failure was probably the heating of the mass on the addition of water, which heating has already been referred to.

#### ATTEMPTED PRODUCTION OF IRON DIOXIDE.

The production of iron dioxide was of course the most important of the problems. The hope of accomplishing this result was the inciting cause of the investigation, and a great number of experiments were conducted with this end in view.

As it is well-known that chromium dioxide can be readily obtained by adding a solution of a chromic or chromous salt to a chromate it

would seem at first sight that, having the iron monoxide and the trioxide, the iron dioxide might be easily prepared by an analogous reaction to the one above-mentioned.

To produce a precipitate of iron dioxide from a solution of sodium ferrate, which is highly alkaline, the solution of the iron salt added would have to be alkaline. Such a solution may be made in many ways, such as by the addition of tartaric acid, citric acid, or glycerol, to a solution of a ferric salt and then adding a caustic alkali in excess, but in each case the organic solvent was oxidized before any precipitate was formed, and so this method had to be abandoned.

The addition of barium ferrate to solutions of ferric chloride, both normal and basic, was tried with apparently good prospects of success as the barium went into solution as chloride, but at the same time oxygen and also chlorine were given off, so that the precipitate ultimately obtained consisted merely of ordinary ferric hydroxide. For the purpose of this experiment, the barium ferrate was just as good as normal sodium ferrate, could this latter be produced; the barium ferrate decomposed the ferric chloride perfectly, so that if iron dioxide is capable of production, here the conditions of success seemed to be the best, and yet the result of the reaction was only ordinary ferric oxide. Hence it is quite certain that if iron dioxide can be made at all, it is a compound of such exceeding instability as to be decomposed as fast as formed.

#### THE REACTIONS OF BARIUM FERRATE.

Of the ferrates the most stable, the one that can be prepared in the purest state and the most definite in composition is barium ferrate,  $\text{BaFeO}_4 \cdot \text{H}_2\text{O}$ , this formula having been determined by Fremy and H. Rose. Before barium ferrate has been allowed to dry in a desiccator it is not so easily decomposed, at least completely. If barium ferrate, which has not been allowed to dry, be suspended in water through which carbon dioxide is passed, it will be completely decomposed with the formation of barium carbonate and ferric hydroxide, oxygen being set free. From this decomposition it might reasonably be expected that iron dioxide would be formed just as manganese dioxide is formed on passing carbon dioxide through water containing barium manganate in suspension, but such is not the case. This experiment would also seem to indicate that neither a compound of iron corresponding to a permanganate nor a compound corresponding to a bichromate exists. The result of passing carbon dioxide through water containing barium ferrate in suspension, with the object of obtaining new iron salts, therefore carries with it two disappointments.

When barium ferrate has been thoroughly dried in a desiccator it is readily attacked by acids, but complete decomposition is not readily effected in the cold even with dilute sulphuric acid, oxalic acid, formic or acetic acids. Hydrochloric acid decomposes it completely with the greatest readiness, chlorine being always set free. If barium chromate be digested with a solution of sodium ferrate, barium ferrate is formed and the solution changes colour from red to yellow, due to the sodium chromate which has been formed. The reverse reaction never takes place. Thus, if barium ferrate is digested with a cold solution of an alkaline carbonate, sulphate or triphosphate, an alkaline ferrate is never formed, the solution remaining colourless. An alkaline sulphate will decompose barium ferrate that has not been dried with the formation of barium sulphate and ferric hydroxide, oxygen being set free. It thus appears that barium ferrate is one of the most insoluble salts known. It is strange that in none of the publications up to this time has the behaviour of barium ferrate to neutral salts been referred to.

#### THIOFERRATES.

Fremy states that on passing hydrogen sulphide through a solution of sodium ferrate a solution is obtained of a beautiful emerald colour. He supposed that the sodium ferrate was converted into sodium thioferrate. On passing hydrogen sulphide through a solution of sodium ferrate I sometimes obtained the green solution described by Fremy, and at other times not. Investigating the matter, I found that the green solution was obtained only when the original solution contained manganese. It appears then that on passing hydrogen sulphide through a ferrate solution containing a manganate the ferrate is reduced by the hydrogen sulphide, leaving the green manganate solution behind. If, on the other hand, the ferrate solution contains no manganese on passing hydrogen sulphide through it, the red colour disappears and a solution is obtained having a greenish yellow tinge, such as is obtained by digesting precipitated iron sulphide in a solution of an alkaline polysulphide, the greater part of the iron being precipitated as black sulphide. The supposed thioferrates must therefore be considered as mythical.

The only use so far suggested for the ferrates is the production of oxygen described in British Patent, No. 85, January 10, 1886, to Brooman, a communication by Maréchal and Tessié du Motay, in which it is stated that potassium, sodium, and barium ferrate may be decomposed by a current of steam, and subsequently reformed by the action of a current of air at high temperature.



Whether the ferrates resemble the chromates or manganates more is difficult to say. If a salt could be produced corresponding either to the bichromates or the permanganates, the question would of course be immediately decided. The extreme insolubility of barium ferrate, together with the solubility of calcium ferrate, as well as the instability of the dioxide, if it does exist, brings the ferrates closer to the chromates than the manganates. On the other hand, the soluble ferrates can only exist in alkaline solutions, and in this respect they resemble the manganates. In their oxidising power the ferrates still more closely resemble the manganates. It has already been stated that a ferrate will oxidise nitrites, tartarates, and glycerol. The soluble ferrates are also decolorised or reduced by oxalates, alcohol, ether, ammonia, urea, and other soluble organic bodies with very few exceptions, such as, and notably, the acetates. They are decomposed also by some insoluble organic bodies, such as paper and insoluble carbohydrates, but most insoluble organic bodies, such as the paraffines and benzene, decompose them but very slowly.

To perform all the experiments on ferrates above referred to, sodium and potassium ferrate had often to be prepared. Of all the methods of making these salts the easiest is to pass chlorine through a strong solution of sodium hydroxide, containing ferric hydroxide in suspension. At one time I produced sodium ferrate on a scale never before attempted. Three kilos of sodium hydrate were dissolved in enough water to form 10 litres of solution. To the solution were added 150 grams of ferric chloride, and the mixture stirred for a long time until the ferric hydroxide formed was all finely divided and evenly distributed throughout the solution. Through the mixture chlorine gas was then passed from a cylinder of liquid chlorine which had kindly been presented by my friend, Dr. Rudolph Knietzsch, one of the leading chemists of the Badische Anilin und Soda Fabrik, of Ludwigshafen, Germany. The operation was carried on very successfully, the chlorine gas passing through with great regularity, and in this manner a quantity of stock solution was prepared sufficient for all subsequent experiments.

It may here be stated that whenever an experiment is described above it has been actually tried for the purpose of making sure that the reaction indicated actually takes place.

The following is a summary of the errors which occur in the literature of ferric acid:—

1. The direction for making potassium ferrate by adding iron nitrates to caustic potash, by Stahl.
2. The statement that on standing a solution of potassium ferrate changes colour and turns green, made by J. Denham Smith.
3. The statement that calcium ferrate is insoluble in water, made by Fremy.
4. The direction for making thioferrates by passing hydrogen sulphide through a solution of a ferrate, by Fremy.
5. The allegation that sodium ferrate cannot be made except in the wet way, made by Wurtz.

Of these the second error was corrected by H. Rose, and the third by Bloxam, the other three having now for the first time been brought to light.

## Trade Notes.

**THE NEW TAMARUGAL NITRATE COMPANY, LIMITED.**—This company announces that £3,600. of its six per cent. debentures have been drawn, and will be paid off at £105. per cent. at Williams Deacons and Manchester and Salford Bank, Limited, 20, Birchin-lane, London, E.C., on February 1st, when the interest thereon will cease.

**MESSRS BERGER, KAHLER, AND CO.**—We are informed that this firm, in addition to being sole agents for the United Kingdom and Colonies for Messrs. Koenigswater and Ebell, of Linden, are also now agents for the Anhaltische Blei und Silberwerke, who make white sugar of lead, &c.; the Continental Farbwerke (Bernhard Fischer), makers of colours for soapsect, and for Messrs. Freidr, Fenstell, Nachfolger, Hamburg, for the sale of their essential oils, &c.

**WATERFALLS AND ALUMINIUM WORKS.**—The estate of Hafslund, near the great waterfall known as the Sarpsfos, between Christiania and Göteborg, has been acquired by a syndicate, consisting chiefly of German and American capitalists, for the sum of 800,000 kroner. The purchasers intend to form a large company with a capital of three to five million kroner, in order to utilise the water power of the falls for electrical force, and establishing aluminium works on the same principle as those now being constructed at the Falls of Foyers in Scotland. The Sarpsfos is one of the finest falls in south-eastern Norway, being 74 ft. in height and 116 ft. in width. The water power is, however, already utilised by numerous saw mills and cellulose factories, and the railway crosses the fall, so that the proposed new works will probably not interfere to any great extent with the picturesque aspect of the place.

**END OF THE OIL AND PARAFFIN COMBINE.**—The meetings that have been held in London and Glasgow during the last few days have, as we anticipated, proved futile, and it is now generally accepted that the Scotch oil and scale combine is practically ended. The Clippen's Company has intimated that owing to the abandonment of the arrangement with the American Company, they will conduct their business with a free hand.

**MANCHESTER PITCH EXPORTS.**—The exports of pitch from Manchester, via the Ship Canal, are steadily growing in volume, the markets at present being Swansea, St. Nazaire, and the South of France. The trade to the first-named port is done mainly by small coasting sailers and steamers which bring pottery material to Runcorn, Ellesmere Port, and Weston Point. A full cargo of pitch left Manchester recently for Cette by the steamer *Brunla*, 425 tons, and it is stated that the Ship Canal Company are about to provide improved facilities for this traffic.

**NITRATE STATISTICS.**—According to recent returns relating to nitrate of soda it appears that the production in December was about 119,000 tons, making the year's output 1,300,000 tons, of which 1,210,000 tons have been shipped. During the past fortnight the open and favourable weather has made the arrivals in Europe very large, and this, with the further hitch in the Combination negotiations, caused a depression in prices, from which the market is just recovering. The negotiations are said to have come to a standstill over so small a matter as 10,000 tons, or less than 1 per cent. of the amount to which it was proposed to restrict the year's shipments.

**LOGWOOD IMPORTS AT MANCHESTER.**—Two barques laden with logwood from Laguna arrived in the Mersey recently, viz., the *Ida*, 284 tons, which left Queenstown on the 7th inst., and the *Mayaguez*, 341 tons which left Falmouth on the 8th. Both vessels entered the canal and will discharge their cargoes in Manchester. The growth of this trade is indicated by the fact that, in addition to the two above mentioned, there are at present six barques discharging cargoes of dyewoods at Trafford Wharf, Salford Quay, and the Salford Docks, namely, *Ruth*, 451 tons, *Vallejo*, 652 tons, *Cubana*, 471 tons, *Giovanni*, 440 tons, *Hugin*, 391 tons, and *Edith Mary*, 304 tons. Further cargoes are fixed by the *Spind* and *Haveskes II.* from Jamaica, and *Liburnia* and *St. Olaf* from Savannah-la-Mar.

**DANGEROUS PARAFFIN LAMPS.**—The *Lancet* publishes a long report of the commission appointed by that journal to inquire into the subject of dangerous lamps. The essential points of construction in a paraffin lamp are, according to the observations made in the investigation, as follows: "1. The reservoir should be of metal or non-fragile material. It should be fixed firmly in the base, and not rest loosely as is the case with many beautiful and artistic lamps in a cup-shaped stand. 2. The lamp should have a base heavy enough to minimise the risk of upsetting. 3. The burner should be connected to the reservoir by a screw with well-cut thread, requiring at least three entire turns before it becomes detached from the reservoir. It should be made tight to the reservoir by means of a washer. Bayonet joints, or pin-and-slot joints, not to say the mere fitting on of the burner like a cap on the mouth of a reservoir, should be prohibited. 4. The wicks should be constructed of material of good quality and should fill the space of the wick-tube. The wick should be replaced by a new one as soon as it gets worn and diminishes in size. Circular wick tubes should never be fed by a flat wick the edges of which are not likely to close up in the wick tube. The wick in these cases should be a complete cylinder. 5. The wick tube should be made to descend into the reservoir within at least a quarter of an inch of the bottom. Assuming the screw of the burner to be free from defect, it would then be impossible for oil to escape—the source of most of the danger of paraffin lamps, nearly all of which have their wicks hanging unguarded in the reservoir. This arrangement would also render it impossible for the flame to travel into the reservoir space." This is very interesting and desirable, but the *Lancet* should finish its task by pricing such a lamp. It all depends on that.

## Market Reports.

### TAR AND AMMONIA PRODUCTS.

Benzols are steady at 2s. 3½d. for 90's and 2s. for 50/90's. Carboic acids are firm, makers being well booked with orders: Crude (60%) stands at 1s. 9½d., and 40% crystals 6½d. Crude naphtha firm at 10d. and solvent 1s. 6d. Creosote unaltered. Anthracene 11½d. to 1s. for 30% A, and 9½d. to 10d. for B. Pitch easier at 36s., f.o.b., East Coast.

Sulphate of ammonia is weak; the feeble state of the market being largely due to the free selling being practised by London makers. There is, however, a rather steadier feeling at the close, with prices as follows:—London outside makes £8. 10s., Liverpool £8. 7s. 6d. to £8. 8s. 9d., Hull £8. 8s. 9d., and Leith £8. 8s. 9d. Beckton value for February-March is £8. 10s., less 2½%. Old Beckton terms £8. 7s. 6d., this being an advance of 2s. 6d. on Thursday's price.



## LIVERPOOL MINERAL MARKET.

There has been a fair business done this week, and good prices have been obtained. Manganese: There have been several arrivals, most of which have been against contract purchases, and have gone direct to consumers' works, so that spot remains practically unchanged, with a tendency to stronger prices. Ground manganese: With the improvement in the price of the raw ore, prices are tending to strengthen; the demand is good at £6., £8., £10., and £12. 10s. per ton, according to quality. Manganiferous iron ore is unchanged at 16s. to 17s. 6d. per ton, c.i.f. Chrome ore: There have not been so many arrivals this week, but the demand keeps strong, and prices are firm at 70s. to 100s. and 105s. per ton, according to quality. Bauxite: There has been more demand for bauxite this week, and prices keep firm at 20s. per ton for first, 16s. for second, and 12s. per ton for third quality, f.o.b., in cargoes. French chalk: There have been several arrivals, but the consumption keeps ahead of the supply, and prices for "Angel White" brands are tending to advance—70s. to 75s., 80s. to 90s., and 100s. to 110s. per ton, according to grade. Wolfram and scheelite have been in increased demand this week, and sales have been made at good figures. Arsenic is scarce at £17. to £19. per ton. Fuller's earth is in good demand, and prices for "Emerald" and other brands continue steady at 50s. for lump, 55s. to 75s. for powdered. Rottenstone is scarce, and prime quality brings good prices; sales are being made at £8. 10s. to £15. per ton, according to grade. The market for ochres and umbers remains steady; there is a fair demand for J.C. ochre at 60s. to 65s. per ton, and prime umber is being done at 40s. to 45s. per ton. Carbonate and sulphate of barytes are practically unaltered. Feldspars and fluorspars remain unchanged, a fair business being done. Emery stone is in rather better request. Plumbago: The demand is very good for foundry and lubricating qualities, at £5. to £10. per ton. Ceylon qualities have been in better demand this week, at prices from £15. to £20. per ton. Pumice stone: The finer grades are very firm, and bring good prices. Iron ore is quiet, and remains without change, at about 10s. per ton.

## THE METAL MARKETS.

LONDON, WEDNESDAY.—Pig iron, dull: Scotch warrants closed at 46s. 5d.; Middlesbrough, 37s. 6½d. cash, and hematite, 47s. 6½d. Copper, firm: Chili bars, G. O. B.'s and G. M. B.'s closed at £41. 3s. 9d. to £41. 8s. 9d. cash, and £41. 11s. 3d. to £41. 16s. 3d. three months. Tin, easier: Straits closed at £59. 7s. 6d. to £59. 17s. 6d. cash, and £60. to £60. 10s. three months. Australian, £60. 2s. 6d.; English ingots, £63. to £63. 10s. Lead, firm: Spanish, £11. 2s. 6d.; English, £11. 5s. to £11. 7s. 6d.; Silesian spelter, ordinary, £14. 5s. Nickel, 1s. 2½d. Antimony, £30. Quicksilver: first hands, £7. 7s. 6d.; second hands, £7. 5s. Copper shares, steady: Cape, 2 to 2½; Copiapo, 1½ to 2½; Libiola, 2½ to 2¾; Mason and Barry, 2¾ to 2½; Rio Tinto, 16½ to 16¾; Tharsis, 4¾ to 4¾.

GLASGOW, WEDNESDAY.—Market easier, with large business. Scotch done at 46s 6½d. and 46s. 5½d. cash, also at 46s. 8d. and 46s. 7½d. one month; closing with buyers at 46s. 5d. cash, sellers ask 46s. 5½d. Cleveland done at 37s. 7½d., 37s. 6½d., and 37s. 7d. cash, also at 37s. 9½d. and 37s. 8½d. one month; closing with buyers at 37s. 6½d. cash, sellers ask 37s. 7½d. Cumberland hematite done at 47s. 10d. and 47s. 9½d. one month; closing with buyers at 47s. 6½d. cash. Middlesbrough hematite done at 45s. 9d. and 45s. 8d. one month; closing with buyers at 45s. 5½d. cash.

## MISCELLANEOUS CHEMICAL MARKET.

There is no change of any importance to record in the situation of alkalis. Ammonia soda is firm at the price fixed by the combined makers, viz., £3. 7s. 6d. nett per ton, bags, f.o.r. works, and £3. 12s. 6d. casks, f.o.b. Caustic soda all round in steady demand, and prices are maintained, quotations for spot and forward delivery being as follows:—F.o.b. Liverpool, 77%, £9. 7s. 6d.; 74%, £8. 10s.; 70%, £7. 10s.; 60%, £6. 10s. nett per ton, 10-ton lots and upwards. Leblanc soda ash is only in limited request, but makers hold for 1d. per degree for ordinary grades and 1¼d. for refined qualities. Bleaching powder is in active demand, and market firm at £7., makers' works, and £7. 5s. to £7. 7s. 6d. f.o.b. Liverpool. Chlorate of potash has slightly advanced, 4¾d. to 4¾d. being nearest values to-day. Chlorate of soda unchanged at 6½d. per lb. Soda crystals quiet at 35s., bags, makers' works. Vitriol in strong request. Sulphur well sold, but no improvement in price. The demand for sulphate of copper has somewhat fallen off, price £15. 10s. to £15. 15s. f.o.b. For potash, caustic and carbonate, there is good inquiry, and prices are firm. White powdered arsenic in short supply, and for spot parcels £16. 15s. to £17. per ton is obtained. Yellow prussiate of potash

7¼d. to 8d., according to make. Brown acetate of lime has declined a further point in value, owing to large stock. Other acetates are all selling at low figures. Acetate of lead decidedly quiet, and price has a lower tendency. For carbolic crystals price is steadily maintained. Aniline oil and salt are also firmly held for advanced prices. Generally, trade is reported quiet.

## TYNE CHEMICAL REPORT.

TUESDAY.

The chemical trade is quiet, with little or no alteration in prices. 76/77% caustic, £9. 5s.; 70%, £7. 10s. to £7. 15s. per ton. Sulphur scarce at £3. 17s. 6d. per ton. Soda crystals, £2. 2s. 6d. per ton, gross weights, locally. Other quotations as under:—

Bleaching powder, softs, £7. 5s. per ton, nett; hard, £7. 10s. per ton, nett; caustic soda, 76/77%, £9. 5s. per ton, nett; do., 70%, £7. 15s. per ton, nett; recovered sulphur, 2 cwt. bags, £3. 17s. 6d. per ton, nett; soda ash, 48%, £3. 15s. per ton, nett; do., 52%, £3. 17s. 6d. per ton, nett; do., 56%, £4. per ton, nett; alkali, 36%, £2. 15s. per ton, nett; white alkali, 48%, £4. 10s. per ton, nett; do., 50%, £4. 15s. per ton, nett; do., 52%, £5. per ton, nett; hyposulphite of soda, 5-7 cwt. casks, £6. 5s. per ton, nett; do., 1 cwt. kegs, £7. per ton, nett; silicate of soda, 75° Tw., £2. 12s. 6d. per ton, nett; do., 100° Tw., £3. per ton, nett; do., 140° Tw., £3. 7s. 6d. per ton, nett; soda crystals, casks, £2. 2s. 6d. per ton, gross weight; do., 2 cwt. bags, £2. 2s. 6d. per ton, nett weight; chlorate of potash, 5d. per lb., less 6%; pearl hardening, £3. per ton, nett; pure white sulphate of alumina, £3. 17s. 6d. per ton, nett; blanc fixe, £7. 5s. per ton, nett; chloride of barium, refined crystals, £6. 15s., per ton, nett; do., 90/95%, crude calcined, £6. per ton, nett; sulphide of barium, crystals, £4. 15s. per ton, nett; carbonate of alumina, £30. per ton, nett; aluminate of soda, £30 per ton, nett.

SALT.—South Durham salt is steady at 9s. to 9s. 6d. per ton, f.o.b., Tees.

COALS.—There is very little alteration in the price of coals. Gas coals continue in full demand and are firm in price. There is also a rather better demand for coke. To-day's quotations are:—Best Northumbrian steam, 7s. 9d. to 7s. 10½d. per ton; second qualities, 6s. 9d. to 7s. per ton; small steam, 3s. 6d. to 3s. 9d. per ton; household coals, 10s. 6d. to 11s. per ton; gas coals, 7s. to 7s. 6d. per ton coke, 14s. 6d. to 15s. per ton.

## WEST OF SCOTLAND CHEMICALS.

GLASGOW, TUESDAY.

The outstanding feature in the Scotch market this week is the definite break up of the Solid Paraffin Combine, initiated just about a year ago, and long very sickly. The adjourned meeting of the Scottish producers was held in Glasgow yesterday, when it was seen that the agreement was finally doomed; and delegates parted on the understanding that each maker was to sell at whatever reduction he pleased. The undernoted figures (for paraffin scale and paraffin wax) are permitted to stand this week at the Combine rates, but these articles are probably procurable at one halfpenny per lb. less, although no transactions are as yet on report. The other products of the mineral oil section are unchanged. Sulphate of ammonia is quite neglected, and the figures given below are thus merely nominal. In the general chemicals market there is observable a slightly firmer tendency perhaps, but the improvement is as yet of the faintest. Speculative inquiry, both for home and foreign destination, is a little more in evidence than it was a week ago.

Chief prices current are:—Soda crystals, £2. 2s. 6d., nett, Tyne; soda ash, 48/56°, £3. 15s. to £4. 15s. nett, Tyne; white alkali, 48/52°, £4. 10s. to £5. nett, Tyne; alum in lump, £5. 10s. nett, Glasgow; caustic soda, white, 76° £9. 5s., 70/72° £7. 10s., 60/62° £6. 10s., and cream 60/62° £6. 10s.; all nett, Liverpool; bleaching powder, £6. 15s. to £7. 5s. nett, Tyne; saltcake, 27s. 6d.; borax, English, refined, £20., and boracic acid, £30. nett, Glasgow; bicarbonate of soda, 5-cwt. casks, £6. 10s., and 1-cwt. casks £6. 15s. nett, Liverpool; bichromate of potash, 4½d. nett, for Scotch and English deliveries (for export, 4¼d. nett, f.o.b. Glasgow); bichromate of soda, 3¾d. nett, for Scotch and English deliveries (for export, 3½d. nett, f.o.b. Glasgow); chlorate of potash, 4¾d. less 5%, Liverpool; nitrate of soda, 7s. 7½d. to 7s. 10½d.; sulphate of ammonia, £8. 10s. to £8. 11s. 3d. prompt, f.o.b. Leith; salammiac, first and second white, £39. and £37. nett, any port; sulphate of copper, £15. 12s. 6d. to £15. 15s., less 5%, Liverpool; paraffin scale, hard, 2½d., and soft, 1¾d. to 2¾d. per lb.; paraffin wax, 120° semi-refined, 2¾d. to 2¾d.; paraffin spirit (naphtha), 7½d. to 8d. per gallon; paraffin oil (burning) No. 1, 6½d., and crystal, 6¾d., at works, for Scotch buyers (English sales about ½d. lower); ditto (lubricating) 865° £4. 15s. to £5., 885° £5. 5s. to £5. 10s., and 890/895° £5. 10s. to £6. 10s. Week's imports of sugar at Greenock were 30,500 bags beet unrefined.



## REPORT ON MANURE MATERIAL.

The market is still very quiet, and the tendency of prices is rather in favour of buyers. Quotations for mineral phosphates are unchanged. On the one hand they do not seem to admit of any further reduction; on the other hand manure makers seem determined not to go in for further extensive purchasing until they can form some opinion as to how the coming manure season will turn out. There is nothing fresh to report in River Plate bones, and the nominal value of cargoes afloat is still about £3. 15s. per ton. Crushed Kurrachee bones offer at £4. per ton, ex store, without finding buyers. Further business in Bombay bone meal has been done for January-February shipment, at £3. 16s. 3d per ton, ex quay, and this price would still be accepted. Common grinding bones are worth £3. 10s. to £3. 15s., as in quality and condition. Nitrate of soda is a shade easier on spot, there being sellers of ordinary quality at 7s. 6d. per cwt., in quantity. For fine quality 7s. 7½d. to 7s. 9d. still required. Due cargoes are, perhaps, a shade firmer, and 7s. 6½d. per cwt. is nearest value. Home prepared dried blood offers at 7s. 6d. per unit, delivered free to rails at works.

## LIVERPOOL OIL AND COLOUR MARKET.

WEDNESDAY.

**OILS.**—Owing to the small quantity offering, palm oil is steady, but there is not much business doing. About 50 tons of Lagos have been done at £20. 5s. transit. There is no change in olive. Linseed are being steadily held for 20s. 6d. to 21s. per cwt., Liverpool makes, in export casks, but things are rather quiet. There is a rather firmer tone in cottonseed, and the market is steady. Liverpool refined is quoted 17s. 9d. to 18s. per cwt., in export barrels. Castor oil is steady, good seconds Calcutta offering at 2½d., and first pressure French at 2½d. per lb. Owing to the improved enquiry for tallow, the market is firmer, and prices steadier. Low grade rosin continues in good demand at full prices, but as the values of the higher qualities are unaltered, there has been a falling off in the demand. There is a fairly good business doing in spirits of turpentine, which are now being firmly held for 21s. 6d. per cwt. spot. Petroleum steady and unaltered:—American, 7d. to 8½d.; and Russian refined, 6½d. per gallon.

**COLOURS** are steady, without alteration in prices. Ochres: Oxfordshire, common, £10., medium, £12., best, £15. Derbyshire, common, 40s.; medium, 50s., best, 60s.; Welsh, best, 90s., seconds, 50s., and common, 18s.; Irish, Devonshire, 40s. to 45s.; French, J.C., 60s. to 65s.; M.C., 65s. to 67s. 6d. Umber: Turkish quiet; Devonshire, 50s. to 55s. White lead, £16. Red lead unchanged. Venetian red, £6. to £10. Cobalt: Prepared oxide, 9s. 9d.; black, 9s.; blue, 6s. Zaffres: No. 1, 3s. 6d.; No. 2, 2s. 6d. Oxide of iron: Common, £7.; medium, £10.; finest, £20. Zinc oxide, £22. 10s. to £25.

## HULL PAINT, OIL, AND COLOUR REPORT.

TUESDAY.

**OILS.**—The oil trade is being well maintained, with few variations in price; yet upon the whole prices are better. The imports up to date, compared with the same period of last year, have been:—Linseed, 46,546 quarters, against 13,642 quarters; rapeseed, 1,210 quarters, against 12,718 quarters; cottonseed, 17,139 tons, against 14,132 tons; olive oil, 451 casks, against 904 casks; rape oil, 211

casks, against 409 casks; oil cakes, 1,910 tons, against 1,323 tons; tallow, 2,756 cwt., against 1,199 cwt.; turpentine, 2,612 barrels, against 2,967 barrels. Linseed oil, after declining 5s. per ton, closes firm at 19s. to 19s. 1½d. on the spot; February-April and May-August deliveries offer at 18s. 9d.; boiled and refined from £1 to £2. per ton extra. Export for week, 680 cwt. Refined cotton oil has improved about 7s. 6d. per ton, closing firm at 15s. 1½d. to 15s. 3d. naked; February-April is quoted 15s. 6d., and May-August 16s. 3d. per cwt. Crude upon the spot is quoted 13s. 6d. naked. Export of refined for the week, 4,060 cwt. Casks are quoted £1. per ton and barrels 30s. per ton extra. Olive oil unchanged. Castor oil is steady. Spirits of turpentine, 22s. 3d. per cwt. Cod oil from £16 10s. to £19. per ton. Neutral liquid soap, £16. per ton. Mineral oil continues scarce and enhanced in values. Sweet fat, £26. per ton, Locomotive grease, £12. per ton.

**CAKES.**—Linseed cakes in moderate request; prices firm: 95% pure, £6. 5s.; Russians, £5. 17s. 6d. Oil cakes, £5. 2s. 6d. to £5. 5s. Cotton cakes quiet; best makes, £3. 13s. 9d.; seconds, £3. 10s. Rape cakes: Black Sea, £2. 7s. 6d.; East India, £3. 7s. 6d. per ton.

**PAINTS.**—Trade continues good. Prices are:—White lead, red lead, and oxide of zinc unchanged. Dry mineral colours from £3 10s. to £8. per ton. Ultramarines, 3d. to 8d. per lb.; black, blue, red, oxide, green, and venetian red paints from £11. per ton. Ready-mixed paints, in lever tins, from £24 per ton. Paint remover, 25s. per cwt. Natural dubbin, for belts, etc., 12s. per gallon. Oak varnish, 5s. 6d. per gallon. Black varnish, £5. 10s. per ton, in barrels.

## New Companies.

**Pure Oil Co., Ltd.**—CAPITAL, £5,000., in £10. shares. This company has been formed to acquire the business of the Pure Oil Co., Neasden, Middlesex, and to deal in and sell oils, lamps, etc.

**Automatic Soap Co., Ltd.**—CAPITAL, £1,000., in £1. shares. This company has been formed to carry on the business of manufacturers, packers, and dealers in soap, starch, blue, and all other laundry requisites.

**F. J. King and Co., Ltd.**—CAPITAL, £50,000., in £10. shares. This company has been formed to acquire plant, etc., for the production of dessicated soup and preserving potatoes. The subscribers to the memorandum of association are:—W. Wilson, Brablock, Paisley, manufacturer; J. Sutherland, Arden, Bothwell, manufacturer; W. Chaine, Larne, co. Antrim, gentleman; D. Macdonald, Larne Harbour, co. Antrim, C.E.; J. McDowell, Larne Harbour, co. Antrim, secretary; C. H. Brett, 9, Chichester-street, Belfast, solicitor; A. E. Brett, 9, Chichester-street, Belfast, solicitor.

## Gazette Notices.

## PARTNERSHIPS DISSOLVED.

W. HARTLEY and H. SPEAK, dyewood cutters and grinders, Huddersfield, under the style of H. K. Beaumont and Co.

S. H. MATHER, J. ORMESHER and C. MATHER, Middleton and Manchester, dyers and polishers, under the style of Mather, Ormesher and Co., so far as regards S. H. Mather.

M. A. RAGG and E. RAGG, dyers, Birmingham and West Bromwich, under the style of W. and S. Wragg & Son.

## IMPORTS OF CHEMICAL PRODUCTS

## THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

| LONDON.                               |          |                        |  |
|---------------------------------------|----------|------------------------|--|
| Week ending January 11th.             |          |                        |  |
| <b>Acetanilide</b> —                  |          |                        |  |
| Holland,                              | 5 pks.   | F. Boehni              |  |
| <b>Acetate of Lime</b> —              |          |                        |  |
| U. States,                            | 473 pks. | Johnson & Hooper       |  |
| "                                     | 1,513    | H. Wallace & Co.       |  |
| <b>Acetic Acid</b> —                  |          |                        |  |
| Holland,                              | 140 pks  | Hernu, Peron & Co.     |  |
| "                                     | 100      | Beresford & Co.        |  |
| "                                     | 124      | A. & M. Zimmermann     |  |
| <b>Acetone</b> —                      |          |                        |  |
| Italy,                                | 1 pk.    | T. H. Lee              |  |
| Holland,                              | 2        | Phillipps & Graves     |  |
| Germany,                              | 20       | Ryley & Co.            |  |
| <b>Alkali</b> —                       |          |                        |  |
| Holland,                              | 95 c.    | J. Barber & Co.        |  |
| Belgium,                              | 227      | J. Harrison            |  |
| <b>Alum</b> —                         |          |                        |  |
| Holland,                              | 15 pks.  | H. Wallace & Co.       |  |
| "                                     | 81       | R. W. Greeff & Co.     |  |
| <b>Ammonium Chloride</b> —            |          |                        |  |
| Holland,                              | 11 pks.  | H. Lorenz              |  |
| <b>Antimony Ore</b> —                 |          |                        |  |
| Sydney,                               | 23 t.    | Hallet & Fry           |  |
| "                                     | 8        | Bath & Son             |  |
| U. States,                            | 18       | H. R. Merton & Co.     |  |
| Corsica,                              | 185      | J. Bamber              |  |
| <b>Asbestos</b> —                     |          |                        |  |
| Italy,                                | £20      | T. Boorn               |  |
| Germany,                              | 10       | Craven & Co.           |  |
| <b>Barytes</b> —                      |          |                        |  |
| Holland,                              | 46 cks.  | O'Hara & Hoar          |  |
| Belgium,                              | 99       | "                      |  |
| Holland,                              | 69       | Taylor Bros.           |  |
| Belgium,                              | 78       | J. L. Lyon & Co.       |  |
| <b>Caoutchouc</b> —                   |          |                        |  |
| Germany,                              | 100 c.   | Forbes, Forbes & Co.   |  |
| Sydney,                               | 3        | C. S. Lovell           |  |
| Ibo,                                  | 30       | L. & I. D. Jt. Co.     |  |
| Madagascar,                           | 30       | W. M. Smith & Sons     |  |
| Zanzibar,                             | 4        | Hale & Son             |  |
| "                                     | 11       | Gray, Dawes & Co.      |  |
| P. E. Africa,                         | 24       | W. M. Smith & Son      |  |
| C. America,                           | 34       | Price, Hickman & Co.   |  |
| Germany,                              | 7        | S. Figgis & Co.        |  |
| M'dagascar,                           | 20       | L. & I. D. Jt. Co.     |  |
| Zanzibar,                             | 7        | "                      |  |
| "                                     | 1        | Arbuthnot, Ewart & Co. |  |
| <b>Castor Oil</b> —                   |          |                        |  |
| France,                               | 6 brls.  | Beresford & Co.        |  |
| Italy,                                | 25 cs.   | Barron,                |  |
| "                                     | "        | Harveys & Co.          |  |
| Belgium,                              | 6        | Sawer, Sons & Co.      |  |
| France,                               | 48       | J. T. Morton           |  |
| <b>Caustic Potash</b> —               |          |                        |  |
| Holland,                              | 101 pks. | J. M. Steel & Co.      |  |
| <b>Chemicals (otherwise under.)</b> — |          |                        |  |
| Germany,                              | 1 pk.    | L. & I. D. Jt. Co.     |  |
| "                                     | 2 cs.    | Soundy & Sons          |  |
| "                                     | 7        | T. H. Lee              |  |
| "                                     | 46       | Boake, Roberts & Co.   |  |
| "                                     | 35       | A. & M. Zimmermann     |  |



|                          |                          |                              |       |       |                             |                                          |                               |                             |                             |
|--------------------------|--------------------------|------------------------------|-------|-------|-----------------------------|------------------------------------------|-------------------------------|-----------------------------|-----------------------------|
| Belgium, 11              | T. Palmer                | "                            | 1,000 | 1,000 | T. M. Duché & Sons          | <b>Stearine</b> —                        | "                             | 50                          | Mucklow & Co.               |
| Holland, 90 cks.         | Taylor Bros.             | "                            | 100   | 600   | Deering & Robottom          | U. States, 100 sks                       | H. Walbaum & Tosetti          | Halifax, N. S., 200 cks.    | Roucher, Bacon & Co.        |
| Germany, 7 cks.          | J. Barber & Co.          | "                            | 37    | 296   | M. D. Co.                   | Belgium, 10                              | H. Hill & Sons                | Bordeaux, 21                | E. M. Schweich              |
| "                        | Domeier & Co.            | "                            | 300   | 500   | G. Hedges & Son             | France, 50 bgs.                          | Beck & Pollitzer              | New York, 101               | Philadelphian               |
| "                        | H. Honychurch & Co.      | "                            | 250   | 250   | Cole & Carey                | Italy, 5 t.                              | Typke & King                  | Ghent, 25 cs.               | J. T. Fletcher & Co.        |
| U. States, 41            | R. Greening              | "                            | 2,900 | 4,450 | R. G. Hall & Co.            | "                                        | J. Greig                      | <b>Fustic</b>               |                             |
| Holland, 4 pks.          | Pickford & Co.           | "                            | 100   | 600   | T. J. Lipton                | <b>Talc</b> —                            | B. Jacob & Sons               | Tampico, 1,424 ps.          | R. Bulman & Co.             |
| Germany, 5               | Phillips & Graves        | "                            | 250   | 250   | C. S. Lovell                | France, 460                              | Brasch & Rothenstein          | <b>Myrabolams</b>           |                             |
| Belgium, 20 drs.         | T. H. Lee                | "                            | 1     | 5     | Stein Bros.                 | <b>Tartar</b> —                          |                               | Bombay, 466 bgs.            |                             |
| Holland, 4               | "                        | U. States, 250               | 1     | 5     | Ohlenschlager Bes.          | Italy, 7 pks.                            | B. Jacob & Sons               | <b>Valonia</b>              |                             |
| <b>Chrome Ore</b> —      |                          |                              |       |       |                             | <b>Tartaric Acid</b> —                   |                               | Syria, 1,699 bgs.           | C. G. Pajayanni & Jeremias  |
| Sydney, 6 t.             | L. & I. D. Jt. Co.       | <b>Glue</b> —                |       |       |                             | France, 4 pks.                           | W. J. Cook                    | Constantinople, 920         | Jwan Tekeian & Co.          |
| <b>Cream of Tartar</b> — |                          |                              |       |       |                             | "                                        | F. C. Devon & Co.             |                             |                             |
| France, 10 pks.          | B. & F. Wf. Co.          | <b>Manganese Ore</b> —       |       |       |                             | "                                        | H. Lorenz                     |                             |                             |
| Spain, 39                | "                        | Japan, 50 t.                 |       |       | Elkan & Co.                 | "                                        | Domeier & Co.                 |                             |                             |
| "                        | W. C. Bacon & Co.        | Germany, 4                   |       |       | Phillips & Graves           | Holland, 19                              | W. M. Smith & Sons            | <b>Farina</b> —             |                             |
| France, 30               | Finlay & Co.             | Japan, 150                   |       |       | Fellows, Morton & Co., Ltd. | "                                        | F. C. Devon & Co.             | Harlingen, 100 bgs.         |                             |
| Holland, 20              | Kirkpatrick & Co.        | "                            | 150   |       | Sawer, Sons & Co.           | France, 31                               | B. & F. Wf. Co.               | Stettin, 100                |                             |
| "                        | B. & F. Wf. Co.          | <b>Manure</b> —              |       |       |                             | Holland, 12                              | Kirkpatrick & Co.             | <b>Glucose</b> —            |                             |
| <b>Dextrine</b> —        |                          | Belgium, 30 t.               |       |       | J. Gibbs & Co.              | <b>Turpentine</b> —                      |                               | Boston, 500 brls.           |                             |
| Germany, 100 pks.        | M. D. Co.                | Holland, 1                   |       |       | Anderson, Weber & Smith     | Wilmington, 1,792 brls.                  | Fairclough, Dodd, & Jones     | New York, 850               |                             |
| <b>Dyestuffs</b> —       |                          | Germany, 32                  |       |       | A. J. Luke & Co.            | N. Russia, 52                            | F. & S. Chiesman & Co.        | <b>Glue</b> —               |                             |
| <b>Argols</b>            |                          | E. Indies, 500               |       |       | A. Hunter & Co.             |                                          |                               | Hamburg, 40 bgs.            |                             |
| Cape Town, 26 t.         | L. & I. D. Jt. Co.       | N. Zealand, 50               |       |       | Cornwell, Son, & Co.        | <b>Ultramarine</b> —                     |                               | Marseilles, 25 cs.          | Co-op. W'sale Society, Ltd. |
| <b>Cochineal</b>         |                          | Rangoon, 428                 |       |       | Hale & Son                  | Holland, 3 cs.                           | G. Rahn & Co.                 | Rouen, 20 cks.              |                             |
| Canaries, 31 pks.        | W. M. Smith & Sons       | E. Indies, 532               |       |       | E. Davis & Co.              | Germany, 15                              | Steinhof, Sons, & Co.         | Rotterdam, 200              |                             |
| "                        | F. Huth & Co.            | <b>Nitro</b> —               |       |       |                             | Holland, 2 cks.                          | Elkan & Co.                   | <b>Limestone</b> —          |                             |
| "                        | Kuhner, Henderson & Co.  | Holland, 14 cks.             |       |       | Phillips & Graves           | "                                        | Phillips & Graves             | Antwerp, 2 cs.              | J. T. Fletcher & Co.        |
| <b>Cutch</b>             |                          | <b>Ochre</b> —               |       |       |                             | <b>Varnish</b> —                         |                               | <b>Manure</b> —             |                             |
| Rangoon, 100 pks.        | Elkan & Co.              | France, 82 cks.              |       |       | B. & F. Wf. Co.             | Germany, 6 pks.                          | T. H. Lee                     | Philadelphia, 272 bgs.      |                             |
| E. Indies, 250           | W. H. Hindley & Co.      | <b>Pitch</b> —               |       |       |                             | Belgium, 1                               | L. & I. Dk. Co.               | <b>Mineral</b> —            |                             |
| <b>Extracts</b>          |                          | U. States, 34 pks.           |       |       | Watts & Co.                 | <b>Verdigris</b> —                       | Wilson & Co.                  | Vera Cruz, 2,331 bgs.       | Bessler, Waechter & Co.     |
| Holland, 2 pks.          | T. H. Lee                | Germany, 800 brls.           |       |       | Fellows, Morton & Co.       | Holland, 5 pks.                          | J. W. Drysdale & Co.          | <b>Ochre</b> —              |                             |
| France, 220              | Bennett S. S. Co.        | <b>Plumbago</b> —            |       |       |                             | <b>White Lead</b> —                      |                               | Marseilles, 19 brls.        |                             |
| Belgium, 20              | Leach & Co.              | Germany, 1 ck.               |       |       | Craven & Co.                | Holland, 64 cks.                         | Taylor Bros.                  | Rouen, 67 cks.              | Co-op. W'sale Society, Ltd. |
| U. States, 60            | A. J. Humphrey           | Sweden, 40 cs.               |       |       | W. E. Bott & Co.            | "                                        | F. G. Clifford                | <b>Paraffin Scale</b> —     |                             |
| France, 35               | B. & F. Wf. Co.          | U. States, 201 bxs.          |       |       | S. Guiterman & Co.          | Germany, 20                              | H. Johnson & Sons             | Baltimore, 300 brls.        |                             |
| "                        | Carey & Sons             | Ceylon, 60 brls.             |       |       | Doulton & Co.               | Holland, 12                              | J. Barber & Co.               | New York, 1,035             | Thompson & Bedford          |
| <b>Gambier</b>           |                          | Ceylon, 82 cks.              |       |       | O. Scholzig                 | Belgium, 16                              | J. L. Lyon & Co.              | Philadelphia, 66            |                             |
| Singapore, 216 pks.      | Beresford & Co.          | Hong Kong, 349 bgs.          |       |       | L. & I. D. Jt. Co.          | <b>Wood Pulp</b> —                       |                               | <b>Phosphates</b> —         |                             |
| Japan, 1,246             | P. & O. Co.              | <b>Potassium Chloride</b> —  |       |       |                             | Italy, 466 pks.                          | J. L. Lyon & Co.              | Ghent, 1,000 bgs.           |                             |
| China, 118               | W. France & Co.          | Germany, 400 pks.            |       |       | W. G. Blagden               | Sweden, 244                              | W. G. Taylor & Co.            | <b>Phosphate of Lime</b> —  |                             |
| Singapore, 995           | R. & J. Henderson        | "                            | 500   |       | F. W. Berk & Co.            | "                                        | Chrisophersen, Andrews, & Co. | Treport, 180 t.             | Phospho-Guano Co.           |
| <b>Indigo</b>            |                          | "                            | 503   |       | Anglo-Cont. G. Wks.         | Norway, 5,600                            | W. E. Bott & Co.              | <b>Phosphate Rock</b> —     |                             |
| E. Indies, 108 cts.      | J. Hatton, Hall & Co.    | <b>Potassium Cyanide</b> —   |       |       | Beresford & Co.             | Germany, 163                             | O. Herrlich                   | Port Royal, S. C., 2,750 t. |                             |
| "                        | Elkan & Co.              | Germany, 40 pks.             |       |       | W. E. Cole                  | Norway, 720                              | W. G. Taylor & Co.            | <b>Potash</b> —             |                             |
| "                        | Parsons & Keith          | <b>Potassium Sulphate</b> —  |       |       | Charles & Fox               | Holland, 52                              | W. Friedlaender               | Antwerp, 5 brls.            |                             |
| "                        | T. Barlow & Bros.        | France, 50 pks.              |       |       |                             | "                                        | E. J. & W. Goldsmith          | Dunkirk, 27 drs.            |                             |
| "                        | L. Achard & Co.          | <b>Pumice Stone</b> —        |       |       |                             | "                                        | J. Owen                       | <b>Saltpetre</b> —          |                             |
| Ceylon, 9                | P. & O. Co.              | Italy, 17 t.                 |       |       | A. G. Soutter & Co.         | Norway, 40                               | Thames S. T. & L. Co.         | Hamburg, 17 cks.            |                             |
| E. Indies, 5             | J. Owen                  | "                            | 4 t.  |       | Blundell, Spence & Co.      | <b>Zinc Oxide</b> —                      | Johnsen & Jorgensen           | <b>Soap</b> —               |                             |
| "                        | Arbuthnot, Latham & Co.  | <b>Pyrites</b> —             |       |       | O'Hara & Hoar               | Holland, 40 cks.                         | M. Ashby, Ltd.                | New York, 400 cs.           | 50 cts. 600 bxs.            |
| "                        | Darling Bros.            | Spain, 740 t.                |       |       | C. L. Vasey & Co.           | <b>LIVERPOOL.</b>                        |                               | Norfolk, Va., 335 brls.     |                             |
| "                        | Ralli Bros.              | <b>Rosin</b> —               |       |       |                             | <b>Acetic Acid</b> —                     |                               | New York, 4                 | F. Xenapulo & Co.           |
| "                        | Rees & Deering           | U. States, 300 brls.         |       |       | Williams, Torrey, & Co.     | Rotterdam, 17 brls.                      | 10 blns.                      | "                           | Burrough, Wellcome          |
| "                        | Wrightson & Son          | Germany, 26 cks.             |       |       | L. & I. Dk. Co.             | <b>Asbestos</b> —                        |                               | Genoa, 75 pkgs.             |                             |
| "                        | Blyth, Greene, & Co.     | U. States, 2,000 brls.       |       |       | Produce Brokers' Co.        | St. John's, Nfld., 10 bgs.               |                               | <b>Soapstone</b> —          |                             |
| "                        | R. Von Glehn & Sons      | "                            | 1,000 |       | Fairclough, Dodd, & Jones   | St. John's, N.B., 1,200                  |                               | Bordeaux, 200 bgs.          | G. G. Blackwell, Sons & Co. |
| "                        | Dipnall & Co.            | <b>Saltpetre</b> —           |       |       | Moore & Hole                | <b>Barytes</b> —                         |                               | <b>Soda</b> —               |                             |
| "                        | Lewis & Peat             | Germany, 90 cks.             |       |       | P. Hecker & Co.             | Antwerp, 18 cks.                         | 150 bgs.                      | Rotterdam, 6 kgs.           |                             |
| "                        | H. W. Jewesbury & Co.    | <b>Silicate</b> —            |       |       |                             | <b>Bone Meal</b> —                       |                               | <b>Sodium Silicate</b> —    |                             |
| "                        | E. Bower & Co.           | E. Indies, 575 bgs.          |       |       | Lucas & Spencer's           | Karachi, 6,500 bgs.                      |                               | Rotterdam, 1 ck.            |                             |
| "                        | Patry & Pasteur          | "                            | 336   |       | Perkins & Homer             | Bombay, 3,562                            |                               | <b>Starch</b> —             |                             |
| "                        | W. Brandt, Sons, & Co.   | <b>Silica</b> —              |       |       |                             | <b>Chemicals (otherwise undescribed)</b> |                               | Philadelphia, 400 bgs.      |                             |
| "                        | L. & I. D. Jt. Co.       | Belgium, 433                 |       |       | W. Harrison & Co.           | Hamburg, 4 cs.                           |                               | Baltimore, 1,250 sks.       |                             |
| "                        | Walker, Munzie, & Co.    | <b>Sodium Hyposulphate</b> — |       |       |                             | <b>Chrome Ore</b> —                      |                               | Ghent, 13 cs.               | J. T. Fletcher & Co.        |
| "                        | P. Macfadyen & Co.       | Holland, 75 pks.             |       |       | F. Boehm                    | Philadelphia, 5 brls.                    |                               | New York, 100               | T. M. Duché & Son           |
| "                        | Croysdale & Co.          | "                            | 34    |       | R. W. Greeff & Co.          | <b>Cobalt Oxide</b> —                    |                               | "                           |                             |
| "                        | Credit Lyonnais          | "                            | 134   |       | Petri Bros.                 | Rotterdam, 27 cs.                        |                               | Hamburg, 76 cs.             |                             |
| <b>Oreochella</b>        |                          | <b>Starch</b> —              |       |       |                             | <b>Cod Oil</b> —                         |                               | <b>Stearine</b> —           |                             |
| Zanzibar, 74 pks.        | Major & Field            | Holland, 800 pks.            |       |       | Vokins & Co.                | St. John's, Nfld., 66 cks.               | J. J. Langley                 | Boston, 750 tcs.            |                             |
| <b>Shumac</b>            |                          | "                            | 180   |       | Little & Johnston           | "                                        | T. Boyd & Co.                 | St. John's, Nfld., 38 cks.  | J. J. Langley               |
| Italy, 200 pks.          | Darling Bros.            | Belgium, 80                  |       |       | Leach & Co.                 | "                                        |                               | Antwerp, 8                  | J. T. Fletcher & Co.        |
| "                        | J. Kitchin, Ltd.         | "                            | 560   |       | E. & T. Pink                | <b>Colours</b> —                         |                               | "                           |                             |
| "                        | Harris Bros.             | Holland, 60                  |       |       | Sawer, Sons & Co.           | Ghent, 12 brls.                          | J. T. Fletcher & Co.          | <b>Sulphate of Lime</b> —   |                             |
| <b>Tanner's Bark</b>     |                          | Germany, 1,790               |       |       | Phillips & Graves           | Rotterdam, 13 cks.                       | 1 cs.                         | Rouen, 10 cks.              | Co-op. W'sale Society, Ltd. |
| Belgium, 21 t.           | Sawer, Sons, & Co.       | "                            | 60    |       | F. Clayton & Co.            | <b>Cottonseed Oil</b> —                  |                               | <b>Tallow</b> —             |                             |
| Natal, 7                 | A. & W. Nesbitt          | Belgium, 40                  |       |       | Horne & Co.                 | N. Orleans, 100 brls.                    |                               | B. Ayres, 552 hf.-pps.      | T. Bach & Co.               |
| "                        | Boucher, Mortimore & Co. | Germany, 1,790               |       |       | T. H. Lee                   | <b>Cream of Tartar</b> —                 |                               | Boston, 15 tcs.             | J. Mackie & Co.             |
| <b>Valonia</b>           |                          | Belgium, 60                  |       |       | Harrison                    | Marseilles, 4 brls.                      |                               | "                           |                             |
| A. Turkey, 20 t.         | T. T. Creed              | "                            | 60    |       |                             | <b>Dyestuffs</b> —                       |                               | Philadelphia, 20 hds.       |                             |
| "                        | A. & W. Nesbitt          | <b>Farina</b> —              |       |       |                             | Divi Divi                                |                               | Rotterdam, 125              | 50 brls. 40 hds.            |
| "                        | Deering & Robottom       | France, 5 pks.               |       |       | Hernu, Peron, & Co.         | Hamburg, 344 bgs.                        |                               | "                           |                             |
| "                        | W. H. Mitchell           | U. States, 500 pks.          |       |       | Beresford & Co.             | <b>Extracts</b>                          |                               | "                           |                             |
| "                        | Marshall & French        | "                            | 250   |       | L. Norman & Co., Ltd.       | Baltimore, 344 bgs.                      |                               | "                           |                             |
| "                        | F. Clayton & Co.         | "                            | 10    |       | Union L. Co., Ltd.          |                                          |                               | "                           |                             |



|                        |                                                    |
|------------------------|----------------------------------------------------|
| <b>Tartar</b> —        |                                                    |
| Bordeaux,              | 4 cks.                                             |
| <b>Tartaric Acid</b> — |                                                    |
| Bordeaux,              | 1 ck.                                              |
| <b>Treacle</b> —       |                                                    |
| Philadelphia,          | 450 brls.                                          |
| Stettin,               | 174 cks. Brown,<br>Geveke & Co.<br>Maple Syrup Co. |
| Boston,                | 40                                                 |
| <b>Ultramarine</b> —   |                                                    |
| Hamburg,               | 8 cs.                                              |
| <b>Varnish</b> —       |                                                    |
| Rotterdam,             | 2 cks.                                             |
| <b>Waste Salt</b> —    |                                                    |
| Hamburg,               | 26 t.                                              |
| <b>White Lead</b> —    |                                                    |
| Rotterdam,             | 132 cks.                                           |
| Ghent,                 | 12 brls.                                           |
| <b>Wood Pulp</b> —     |                                                    |
| Boston,                | 548 brls.                                          |
| Rotterdam,             | 24 brls.                                           |
| <b>Zinc Ashes</b> —    |                                                    |
| Rouen,                 | 16 cks. Co-op. W'sale<br>Society, Ltd.             |
| <b>Zinc Oxide</b> —    |                                                    |
| Antwerp,               | 36 brls.                                           |
| <b>Zinc White</b> —    |                                                    |
| Rotterdam,             | 10 cks.                                            |

**MANCHESTER.**

Week ending January 11th.

|                                       |                   |
|---------------------------------------|-------------------|
| <b>Albumen</b> —                      |                   |
| Paris,                                | 2 cks.            |
| Hamburg,                              | 5 cs.             |
| <b>Alum</b> —                         |                   |
| Hamburg,                              | 3 cks.            |
| <b>Barytes</b> —                      |                   |
| Rotterdam,                            | 100 bgs.          |
| Antwerp,                              | 20                |
| <b>Bone Ash</b> —                     |                   |
| Rio Grande,                           | qty.              |
| <b>Caustic Soda</b> —                 |                   |
| Hamburg,                              | 20 cks.           |
| <b>Chemicals (otherwise undes.)</b> — |                   |
| Rotterdam,                            | 24 cks.           |
| <b>Colours</b> —                      |                   |
| Antwerp,                              | 87 cks.           |
| Hamburg,                              | 15                |
| Rotterdam,                            | 1 11 cs. 93 brls. |

|                           |                              |
|---------------------------|------------------------------|
| <b>Extracts</b> —         |                              |
| Fiume,                    | 60 cks.                      |
| <b>Farina</b> —           |                              |
| Hamburg,                  | 340 bgs.                     |
| <b>Fustic</b> —           |                              |
| Punta Arenas,             | 900 t.                       |
| <b>Gelatine</b> —         |                              |
| Rouen,                    | 10 cs.                       |
| <b>Glue</b> —             |                              |
| Fiume,                    | 12 cks. 50 bgs.              |
| Rouen,                    | 55 43 brls.                  |
| Rotterdam,                | 6 cs. 180                    |
| Hamburg,                  | 70                           |
| Treport,                  | 3 65 brls.                   |
| <b>Lead Acetate</b> —     |                              |
| Hamburg,                  | 28 cks.                      |
| <b>Limestone</b> —        |                              |
| Antwerp,                  | 1 crte.                      |
| <b>Logwood</b> —          |                              |
| Laguna De                 | 300 t. D. Midgley & Sons     |
| Terminus,                 | 415                          |
| Antigua,                  | 415                          |
| Savannah La               | 458 H. Rooke, Sons,<br>& Co. |
| Mar,                      | 463                          |
| Point-a-Petre,            | 463                          |
| <b>Mineral White</b> —    |                              |
| Fiume,                    | 540 bgs.                     |
| <b>Naphthol</b> —         |                              |
| Hamburg,                  | 8 cks.                       |
| <b>Paint</b> —            |                              |
| Rotterdam,                | 1 dm.                        |
| <b>Para-Nitraniline</b> — |                              |
| Hamburg,                  | 12 cks.                      |
| <b>Potash</b> —           |                              |
| Rotterdam,                | 130 cks.                     |
| Rouen,                    | 4 dms.                       |
| <b>Potassium Oxide</b> —  |                              |
| Hamburg,                  | 2 cs.                        |
| <b>Pumice Stone</b> —     |                              |
| Messina,                  | 40 bgs.                      |
| <b>Rosin</b> —            |                              |
| Savannah,                 | 3,140 brls.                  |
| <b>Salt</b> —             |                              |
| Rotterdam,                | 6 cks.                       |

|                         |                                    |
|-------------------------|------------------------------------|
| <b>Sumac</b> —          |                                    |
| Palermo,                | 525 brls. 25 bgs.                  |
| <b>Soda Crystals</b> —  |                                    |
| Rouen,                  | 4 cks.                             |
| <b>Sodium Nitrate</b> — |                                    |
| Rotterdam,              | 19 cks.                            |
| <b>Sodium Oxide</b> —   |                                    |
| Hamburg,                | 2 cs.                              |
| <b>Starch</b> —         |                                    |
| Fiume,                  | 310 bgs.                           |
| Antwerp,                | 10 cs. J. T. Fletcher<br>& Co.     |
| Hamburg,                | 416                                |
| <b>Sulphuric Acid</b> — |                                    |
| Rotterdam,              | 10 cks.                            |
| <b>Tallow</b> —         |                                    |
| Hamburg,                | 60 tcs.                            |
| <b>Tar Oil</b> —        |                                    |
| Treport,                | 26 cks.                            |
| <b>Tartar</b> —         |                                    |
| Hamburg,                | 11 cks.                            |
| <b>Tartaric Acid</b> —  |                                    |
| Rotterdam,              | 34 cks.                            |
| <b>Ultramarine</b> —    |                                    |
| Hamburg,                | 2 cks.                             |
| Rotterdam,              | 29 cs.                             |
| <b>Wood Pulp</b> —      |                                    |
| Rotterdam,              | 52 brls. 80 pks.                   |
| Holmestrand,            | 2,000                              |
| Skeiu,                  | 2,524                              |
| Hamburg,                | 67                                 |
| Christiania,            | 102 Becker & Co.                   |
| "                       | 1,470 Manchester Ship<br>Canal Co. |
| "                       | 1,200                              |
| Gothenburg,             | 1,232                              |
| "                       | 1,680 Henderson, Craig,<br>& Co.   |
| <b>Zinc Oxide</b> —     |                                    |
| Hamburg,                | 10 cks.                            |
| <b>Zinc White</b> —     |                                    |
| Hamburg,                | 10 cks.                            |

**HULL.**

Week ending January 11th.

|                                            |                                                                           |
|--------------------------------------------|---------------------------------------------------------------------------|
| <b>Barytes</b> —                           |                                                                           |
| Rotterdam,                                 | 102 cks. Hutchinson<br>& Son                                              |
| Antwerp,                                   | 68 Bailey & Leatham                                                       |
| Bremen,                                    | 766 cs. Veitmann & Co.                                                    |
| <b>Bone Meal</b> —                         |                                                                           |
| Boston,                                    | 2,643 bgs.                                                                |
| <b>Chemicals (otherwise undescribed)</b> — |                                                                           |
| Dunkirk,                                   | 70 dms. Wilson,<br>Sons, & Co., Ltd.                                      |
| Stettin,                                   | 4 cks. "                                                                  |
| <b>China Clay</b> —                        |                                                                           |
| Rotterdam,                                 | 122 bgs. Hutchinson<br>& Son                                              |
| <b>Cod Oil</b> —                           |                                                                           |
| Bergen,                                    | 103 brls. Wilson,<br>Sons, & Co., Ltd.                                    |
| Christiania,                               | 10 "                                                                      |
| <b>Colours</b> —                           |                                                                           |
| Amsterdam,                                 | 2 cks. Hutchinson<br>& Son                                                |
| Rotterdam,                                 | 1 21 pks. 12 brls. 2 bxs.<br>W. & C. L. Ringrose<br>& G. Malcolm<br>& Son |
| Hamburg,                                   | 3 cks.                                                                    |
| "                                          | 48                                                                        |
| <b>Dextrine</b> —                          |                                                                           |
| Stettin,                                   | 50 bgs. Wilson,<br>Sons, & Co., Ltd.                                      |
| <b>Dyestuffs</b> —                         |                                                                           |
| <b>Alizarine</b> —                         |                                                                           |
| Rotterdam,                                 | 50 cks. W. & C. L.<br>Ringrose                                            |
| <b>Cutch</b> —                             |                                                                           |
| Bombay,                                    | 200 bxs. Wilson,<br>Sons, & Co., Ltd.                                     |
| <b>Indigo</b> —                            |                                                                           |
| Karachi,                                   | 51 cs. Wilson,<br>Sons, & Co., Ltd.                                       |
| <b>Myrabolams</b> —                        |                                                                           |
| Bombay,                                    | 2,676 bgs.                                                                |
| <b>Farina</b> —                            |                                                                           |
| Ghent,                                     | 114 cs. 17 bgs. Wilson,<br>Sons, & Co., Ltd.                              |
| Harlingen,                                 | 500                                                                       |
| Amsterdam,                                 | 770 "                                                                     |
| Stettin,                                   | 770 "                                                                     |
| <b>Glue</b> —                              |                                                                           |
| Dunkirk,                                   | 18 cks. Wilson,<br>Sons, & Co., Ltd.                                      |
| <b>Lamp Black</b> —                        |                                                                           |
| Ghent,                                     | 36 cks. Wilson,<br>Sons, & Co., Ltd.                                      |

|                           |                                       |
|---------------------------|---------------------------------------|
| <b>Litharge</b> —         |                                       |
| Antwerp,                  | 33 cks. Bailey &<br>Leatham           |
| <b>Manure</b> —           |                                       |
| Ghent,                    | 500 bgs. Wilson,<br>Sons, & Co., Ltd. |
| <b>Minium</b> —           |                                       |
| Antwerp,                  | 8 cks. Bailey &<br>Leatham            |
| <b>Naphthol</b> —         |                                       |
| Rotterdam,                | 1 ck. Hutchinson<br>& Son             |
| <b>Phosphates</b> —       |                                       |
| Ghent,                    | 100 t. Wilson,<br>Sons, & Co., Ltd.   |
| <b>Pitch</b> —            |                                       |
| Amsterdam,                | 13 cks. W. & C. L.<br>Ringrose        |
| Rotterdam,                | 26                                    |
| Amsterdam,                | 26 Hutchinson & Son                   |
| <b>Potash</b> —           |                                       |
| Rotterdam,                | 20 cks. Hutchinson<br>& Son           |
| <b>Quicksilver</b> —      |                                       |
| Liban,                    | 100 cyldrs.                           |
| <b>Rosin</b> —            |                                       |
| Savannah,                 | 3,834 brls.                           |
| <b>Saltpetre</b> —        |                                       |
| Hamburg,                  | 4 cks.                                |
| <b>Sodium Aluminate</b> — |                                       |
| Hamburg,                  | 1 ck.                                 |
| <b>Turpentine</b> —       |                                       |
| Savannah,                 | 2,559 brls.                           |
| <b>White Lead</b> —       |                                       |
| Rotterdam,                | 171 cks. Hutchinson<br>& Son          |
| "                         | 10 W. & C. L.<br>Ringrose             |
| Antwerp,                  | 16 Bailey &<br>Leatham                |
| <b>Wood Pulp</b> —        |                                       |
| Rotterdam,                | 47 pks. Hutchinson<br>& Son           |

**GLASGOW.**

Week ending January 16th.

|                                            |                                   |
|--------------------------------------------|-----------------------------------|
| <b>Acetate of Lime</b> —                   |                                   |
| New York,                                  | 699 bgs.                          |
| <b>Acetone</b> —                           |                                   |
| Hamburg,                                   | 1 pkge.                           |
| <b>Aniline</b> —                           |                                   |
| Hamburg,                                   | 22 cks. 2 cs.                     |
| Amsterdam,                                 | 1                                 |
| <b>Barium Chloride</b> —                   |                                   |
| Rotterdam,                                 | 4 cks. J. Rankine<br>& Son        |
| <b>Barium Sulphate</b> —                   |                                   |
| Antwerp,                                   | 50 bgs.                           |
| Hamburg,                                   | 250 105 cks.                      |
| <b>Barytes</b> —                           |                                   |
| Rotterdam,                                 | 160 cks. J. Rankine<br>& Son      |
| "                                          | 20 pkgs.                          |
| <b>Borax</b> —                             |                                   |
| Hamburg,                                   | 20 cks.                           |
| <b>Caoutchouc</b> —                        |                                   |
| Hamburg,                                   | 7 cks. 1 pkge.                    |
| <b>Castor Oil</b> —                        |                                   |
| Antwerp,                                   | 23 cks.                           |
| <b>Chemicals (otherwise undescribed)</b> — |                                   |
| Hamburg,                                   | 2 cs.                             |
| <b>Colours</b> —                           |                                   |
| Rotterdam,                                 | 13 cks. 1 cs. J. Rankine<br>& Son |
| Antwerp,                                   | 2                                 |
| Rotterdam,                                 | 69 pkgs.                          |
| Hamburg,                                   | 2 5 cs.                           |
| <b>Cottonseed Oil</b> —                    |                                   |
| New York,                                  | 7 cs.                             |
| Baltimore,                                 | 5 brls.                           |
| <b>Dried Blood</b> —                       |                                   |
| Rouen,                                     | 7 cks.                            |
| <b>Dyestuffs</b> —                         |                                   |
| <b>Alizarine</b> —                         |                                   |
| Rotterdam,                                 | 109 cks. J. Rankine<br>& Son      |
| "                                          | 58 pkgs.                          |
| <b>Argols</b> —                            |                                   |
| Bordeaux,                                  | 49 cks. 275 bgs.                  |
| <b>Cutch</b> —                             |                                   |
| Rangoon,                                   | 1,650 bxs.                        |
| <b>Extracts</b> —                          |                                   |
| New York,                                  | 4 brls.                           |
| Rouen,                                     | 15 cks.                           |
| Have,                                      | 34                                |

|                  |                                 |
|------------------|---------------------------------|
| <b>Logwood</b> — |                                 |
| Monte Christo,   | 594 t. M'Arthur,<br>Scott & Co. |
| <b>Valonia</b> — |                                 |
| Smymna,          | 522 t. Martin & Miller          |
| "                | 394 bgs. W. J. & W.<br>Lang     |

|                  |                        |
|------------------|------------------------|
| <b>Glucose</b> — |                        |
| Norfolk, V.A.    | 200 brls.              |
| New York,        | 900                    |
| <b>Glue</b> —    |                        |
| New York,        | 52 brls. 1 bx.         |
| Rouen,           | 45 cks. 23 brls.       |
| Hamburg,         | 100 bgs.               |
| Rotterdam,       | 40 J. Rankine<br>& Son |

|                     |                             |
|---------------------|-----------------------------|
| <b>Lamp Black</b> — |                             |
| Gothenburg,         | 5 cs.                       |
| <b>Ochre</b> —      |                             |
| Rouen,              | 22 cks.                     |
| <b>Paint</b> —      |                             |
| New York,           | 69 cs.                      |
| <b>Phosphate</b> —  |                             |
| Antwerp,            | 1,530 bgs.                  |
| <b>Pitch</b> —      |                             |
| Gothenburg,         | 1 pcl.                      |
| Amsterdam,          | 13 cks.                     |
| <b>Potash</b> —     |                             |
| Rotterdam,          | 32 cks. J. Rankine<br>& Son |

|                 |                            |
|-----------------|----------------------------|
| <b>Rosin</b> —  |                            |
| New York,       | 300 brls.                  |
| <b>Soap</b> —   |                            |
| Newport News,   | 1,019 brls.                |
| Nantes,         | 5 cks.                     |
| <b>Starch</b> — |                            |
| Antwerp,        | 200 cs.                    |
| New York,       | 400 cks. 800 bxs.          |
| Rotterdam,      | 40 cs. J. Rankine<br>& Son |

|                   |                 |
|-------------------|-----------------|
| <b>Stearine</b> — |                 |
| Drontheim,        | 9 cks.          |
| Antwerp,          | 63 bgs.         |
| Amsterdam,        | 124             |
| <b>Tallow</b> —   |                 |
| New York,         | 50 tcs. 20 hhd. |

|                     |                              |
|---------------------|------------------------------|
| <b>Tartar</b> —     |                              |
| Bordeaux,           | 5 cks.                       |
| <b>Varnish</b> —    |                              |
| New York,           | 21 brls. 6 hf-brls. 19 cs.   |
| <b>White Lead</b> — |                              |
| Rotterdam,          | 129 cks. J. Rankine<br>& Son |

|                     |             |
|---------------------|-------------|
| <b>Wood Pulp</b> —  |             |
| Drontheim,          | 2,080 brls. |
| Christiania,        | 1,657       |
| <b>Zinc Oxide</b> — |             |
| Antwerp,            | 25 cks.     |

**TYNE.**

Week ending January 11th.

|                        |                                    |
|------------------------|------------------------------------|
| <b>Alum Earth</b> —    |                                    |
| Hamburg,               | 35 cks. Tyne S. S. Co.             |
| <b>Barytes</b> —       |                                    |
| Rotterdam,             | 103 cks. 80 bgs. Tyne<br>S. S. Co. |
| Antwerp,               | 400 "                              |
| <b>Cod Oil</b> —       |                                    |
| Trondhjem,             | 2 brls.                            |
| <b>Colours</b> —       |                                    |
| Laurvig,               | 1 pcel.                            |
| Hamburg,               | 10 cks. Tyne S. S. Co.             |
| <b>Glue</b> —          |                                    |
| Antwerp,               | 1 ck. Tyne S. S. Co.               |
| <b>Kieselguhr</b> —    |                                    |
| Bergen,                | 166 bgs.                           |
| <b>Pyrites</b> —       |                                    |
| Huelva,                | 5,531 t. Scott Bros.               |
| <b>Soap</b> —          |                                    |
| Rotterdam,             | 4 cs. Tyne S. S. Co.               |
| <b>Starch</b> —        |                                    |
| Rotterdam,             | 56 cs. Tyne S. S. Co.              |
| <b>Tartaric Acid</b> — |                                    |
| Rotterdam,             | 9 cks. Tyne S. S. Co.              |
| <b>White Lead</b> —    |                                    |
| Antwerp,               | 12 cks. Tyne S. S. Co.             |
| <b>Wood Pulp</b> —     |                                    |
| Gothenburg,            | 12 brls.                           |
| Porsgrund,             | 420                                |
| <b>Zinc Oxide</b> —    |                                    |
| Rotterdam,             | 25 cks. Tyne S. S. Co.             |
| Antwerp,               | 25 brls. "                         |
| <b>Zinc Sulphate</b> — |                                    |
| Hamburg,               | 15 cks. Tyne S. S. Co.             |



**GOOLE.**

Week ending January 8th.

|                                          |               |
|------------------------------------------|---------------|
| <b>Alkali—</b>                           |               |
| Calais,                                  | 8 cks.        |
| <b>Anthracene—</b>                       |               |
| Boulogne,                                | 2 cks.        |
| <b>Caoutchouc—</b>                       |               |
| Boulogne,                                | 6 cks.        |
| <b>Chemicals (otherwise undescribed)</b> |               |
| Boulogne,                                | 1 cs.         |
| <b>Colours—</b>                          |               |
| Hamburg,                                 | 16 cks. 2 cs. |
| Ghent,                                   | 2 4 13 kgs.   |
| <b>Dyestuffs—</b>                        |               |
| Alizarine                                |               |
| Rotterdam,                               | 35 cks.       |
| <b>Extracts</b>                          |               |
| Rouen,                                   | 40 cks.       |

**Logwood**

|                                          |                       |
|------------------------------------------|-----------------------|
| Jamaica,                                 | 521 t.                |
| Belize,                                  | 990                   |
| Monte Christi,                           | 747                   |
| <b>Madder</b>                            |                       |
| Rotterdam,                               | 3 cks.                |
| <b>Dyestuffs (otherwise undescribed)</b> |                       |
| Boulogne,                                | 4 cks. 3 cs. 15 pkgs. |
| Rotterdam,                               | 174 '62               |
| <b>Farina—</b>                           |                       |
| Hamburg,                                 | 1,390 bgs.            |
| <b>Glucose—</b>                          |                       |
| Hamburg,                                 | 53 cks.               |
| <b>Glue—</b>                             |                       |
| Rotterdam,                               | 12 bgs.               |
| <b>Potash—</b>                           |                       |
| Rotterdam,                               | 115 cks.              |
| Calais,                                  | 11 dms.               |
| Antwerp,                                 | 4                     |

**Rosin—**

|                         |            |
|-------------------------|------------|
| Brunswick,              | 3,805 cks. |
| Saxannah,               | 4,000      |
| <b>Saltpetre—</b>       |            |
| Hamburg,                | 9 cks.     |
| Rotterdam,              | 105 bgs.   |
| <b>Soda—</b>            |            |
| Antwerp,                | 20 cks.    |
| <b>Sodium Silicate—</b> |            |
| Rotterdam,              | 2 cks.     |
| <b>Wood Pulp—</b>       |            |
| Rotterdam,              | 78 bls.    |

**GRIMSBY.**

Week ending January 11th.

**Caoutchouc—**

|          |           |
|----------|-----------|
| Antwerp, | 2 cs.     |
| Hamburg, | 2 6 pkgs. |

**Chemicals (otherwise undescribed)**

|                   |               |
|-------------------|---------------|
| Hamburg,          | 4 pkgs.       |
| <b>Colours—</b>   |               |
| Hamburg,          | 14 cks. 1     |
| <b>Dyes—</b>      |               |
| Hamburg,          | 48 cks. pkgs. |
| Antwerp,          | 7 6 cs. 69    |
| <b>Dyestuffs—</b> |               |
| Indigo            |               |
| Rotterdam,        | 5 chrs.       |
| <b>Farina—</b>    |               |
| Hamburg,          | 100 bgs.      |
| <b>Plumbago—</b>  |               |
| Hamburg,          | 1 ck.         |
| <b>Wood Pulp—</b> |               |
| Malmo,            | 320 bls.      |
| Hamburg,          | 400           |

**EXPORTS OF CHEMICAL PRODUCTS**

OF

**THE PRINCIPAL PORTS OF THE UNITED KINGDOM.****LONDON.**

Week ending January 15th.

|                                          |                |
|------------------------------------------|----------------|
| <b>Acids—</b>                            |                |
| Lisbon,                                  | 2 pks. £12     |
| Guayaquil,                               | 5 cs. 23       |
| <b>Alum Cake—</b>                        |                |
| Calcutta,                                | 18 t. £64      |
| <b>Ammonia—</b>                          |                |
| Colombo,                                 | 12 cs. £24     |
| <b>Ammonium Carbonate—</b>               |                |
| Santos,                                  | 13 c. £32      |
| Paris,                                   | 3 t. 19 £36    |
| Melbourne,                               | 20 cs. 37      |
| <b>Ammonium Chloride—</b>                |                |
| Constantinople,                          | 1 t. £55       |
| Bombay,                                  | 11 17 c. 417   |
| Auckland,                                | 1 10 34        |
| Reval,                                   | 1 27           |
| Melbourne,                               | 2 2 52         |
| Algoa Bay,                               | 2 pks. 13      |
| <b>Ammonium Nitrate—</b>                 |                |
| Bilbao,                                  | 35 cks. £155   |
| Carthage,                                | 21 93          |
| <b>Ammonium Sulphate—</b>                |                |
| Rotterdam,                               | 30 t. £260     |
| Antwerp,                                 | 23 200         |
| Newport News,                            | 53 552         |
| Bremen,                                  | 100 900        |
| Canaria,                                 | 30 270         |
| Mauritius,                               | 250 2,294      |
| <b>Amorphous Phosphorus—</b>             |                |
| Calcutta,                                | 1 cs. £14      |
| <b>Anhydrous Ammonia—</b>                |                |
| Cape Town,                               | 2 pks. £26     |
| <b>Borax—</b>                            |                |
| Auckland,                                | 1 t. £21       |
| <b>Calcium Chloride—</b>                 |                |
| Colombo,                                 | 4 t. 3 c. £12  |
| <b>Carbonic Acid Gas—</b>                |                |
| Guernsey,                                | 40 tubes £15   |
| <b>Caustic Soda—</b>                     |                |
| Brisbane,                                | 5 c. £13       |
| Dunedin,                                 | 4 17           |
| Algoa Bay,                               | 11 12          |
| Hong Kong,                               | 8 13           |
| Newcastle,                               | 3 8            |
| Natal,                                   | 6 15           |
| <b>Chemicals (otherwise undescribed)</b> |                |
| St. Louis,                               | 1 t. 18 c. £33 |
| Freemantle,                              | 7 40           |
| Manchester,                              | 20 kgs. 28     |
| Spekrey,                                 | 20 cks. 143    |
| Calcutta,                                | 200 dms. 123   |
| Auckland,                                | 14 31          |
| Cape Town,                               | 1 ck. 2 11     |
| <b>Citric Acid—</b>                      |                |
| London,                                  | 2 t. £13       |

**Aniline Salts**

|                                              |                         |
|----------------------------------------------|-------------------------|
| Genoa,                                       | 12 cks. £120            |
| <b>Anthracene</b>                            |                         |
| Rotterdam,                                   | 259 cks. £1,018         |
| <b>Benzol</b>                                |                         |
| Hamburg,                                     | 48 cks. £116            |
| Rotterdam,                                   | 70 50 runs. 9 pipes 453 |
| <b>Carbolic Acid</b>                         |                         |
| Hioo,                                        | 40 cks. £107            |
| <b>Coal Tar Dyes</b>                         |                         |
| Boston,                                      | 11 pks. £240            |
| <b>Creosote Salts</b>                        |                         |
| Philadelphia,                                | 1,210 bgs. £211         |
| <b>Pitch</b>                                 |                         |
| New York,                                    | 300 brls. £142          |
| <b>Tar</b>                                   |                         |
| Algoa Bay,                                   | 400 drs. £14            |
| Cochin,                                      | 15 brls. 10             |
| Mangalore,                                   | 20 13                   |
| <b>Coal Products (otherwise undescribed)</b> |                         |
| Melbourne,                                   | 5 crates £16            |
| <b>Copper Sulphate—</b>                      |                         |
| Treport,                                     | 10 t. 5 c. £158         |
| Barbadoes,                                   | 1 16                    |
| Paris,                                       | 20 320                  |
| Brisbane,                                    | 4 9 75                  |
| Canterbury,                                  | 2 10 41                 |
| Odessa,                                      | 7 7 117                 |
| <b>Copperas—</b>                             |                         |
| Rotterdam,                                   | 2 cks. £15              |
| <b>Cream of Tartar—</b>                      |                         |
| Auckland,                                    | 2 t. 7 c. £229          |
| Wellington,                                  | 10 50                   |
| Canterbury,                                  | 1 5 124                 |
| Sydney,                                      | 2 10 231                |
| <b>Disinfectants—</b>                        |                         |
| Adelaide,                                    | 9 pks. £17              |
| Natal,                                       | 4 cs. 17                |
| Calcutta,                                    | 5 10                    |
| Algoa Bay,                                   | 30 117                  |
| Bahia,                                       | 10 34                   |
| Otago,                                       | 13 23                   |
| Sydney,                                      | 54 58                   |
| Melbourne,                                   | 10 21                   |
| <b>Magnesia—</b>                             |                         |
| Sydney,                                      | 20 cs. £40              |
| <b>Manure—</b>                               |                         |
| Demerara,                                    | 20 t. £225              |
| Genoa,                                       | 98 10 c. 270            |
| Je sey,                                      | 88 668                  |
| St. Lucia,                                   | 50 331                  |
| Limon,                                       | 3 4 24                  |
| S. Vincent,                                  | 140 bgs. 90             |
| Martinique,                                  | 18 13 310               |
| Jamaica,                                     | 39 9 163                |
| <b>Nitric Acid—</b>                          |                         |
| Jersey,                                      | 28 carboys £44          |
| <b>Phosphate of Lime—</b>                    |                         |
| Rio de Janeiro,                              | 5 t. £14                |
| <b>Phosphorus—</b>                           |                         |
| London,                                      | 2 t. £21                |
| Calcutta,                                    | 4 t. 10 c. £90          |
| Reval,                                       | 1 4 81                  |
| Calcutta,                                    | 2 4 41                  |
| Calcutta,                                    | 6 c. £628               |
| Calcutta,                                    | 1 c. £102               |
| Calcutta,                                    | 53                      |

**Potassium Chlorate—**

|                             |                          |
|-----------------------------|--------------------------|
| Mexico,                     | 10 c. £21                |
| <b>Potassium Cyanide—</b>   |                          |
| Pt. Elizabeth,              | 12 t. 10 c. £1,779       |
| <b>Potassium Prussiate—</b> |                          |
| New York,                   | 90 t. 19 c. £1,492       |
| <b>Saltpetre—</b>           |                          |
| Sydney,                     | 7 c. £167                |
| Rio de Janeiro,             | 7 t. 5 174               |
| Bahia,                      | 3 6 79                   |
| Hobart,                     | 10 12                    |
| Vigo,                       | 3 14 81                  |
| Canterbury,                 | 10 12                    |
| Melbourne,                  | 1 23                     |
| <b>Sheep Dip—</b>           |                          |
| Natal,                      | 1,000 drs. £197          |
| Cape Town,                  | 200 45                   |
| Algoa Bay,                  | 300 35                   |
| B. Ayres,                   | 110 t. 6 c. 25 cs. 5,720 |
| <b>Soda—</b>                |                          |
| Pt. Elizabeth,              | 10 t. £24                |
| <b>Soda Ash—</b>            |                          |
| Rio de Janeiro,             | 7 t. 3 c. £28            |
| <b>Soda Crystals—</b>       |                          |
| Natal,                      | 4 t. 3 c. £11            |
| <b>Sodium Bicarbonate—</b>  |                          |
| Auckland,                   | 2 t. £13                 |
| <b>Sulphur—</b>             |                          |
| Hamburg,                    | 5 t. £50                 |
| Algoa Bay,                  | 12 4 c. 124              |
| Mauritius,                  | 100 cks. 75              |
| <b>Sulphuric Acid—</b>      |                          |
| Natal,                      | 3 t. 10 c. £16           |
| Singapore,                  | 1 18 18                  |
| Demerara,                   | 100 pgs. 45              |
| Colombo,                    | 1 10 15                  |
| Aden,                       | 1 3 12                   |
| <b>Superphosphates—</b>     |                          |
| Canaria,                    | 10 t. £41                |
| <b>Tartaric Acid—</b>       |                          |
| Dunedin,                    | 2 c. £13                 |
| Canterbury,                 | 2 12                     |
| Sydney,                     | 10 60                    |
| Auckland,                   | 5 kgs. 29                |

|                           |                 |
|---------------------------|-----------------|
| Sydney,                   | 4 1             |
| Palermo,                  | 15 35           |
| Genoa,                    | 11 2 21         |
| Barcelona,                | 2 2 51          |
| Bombay,                   | 4 10 160        |
| Ancona,                   | 10 2 21         |
| Smyrna,                   | 13 1 25         |
| Bari,                     | 1 5 33          |
| Varna,                    | 12 22           |
| <b>Ammonium Sulphate—</b> |                 |
| Las Palmas,               | 61 t. 5 c. £551 |
| Palermo,                  | 1 19 17         |
| Antwerp,                  | 50 437          |
| Venice,                   | 10 3 1 q. 90    |
| Newport News,             | 71 631          |
| Alicante,                 | 20 10 1 180     |
| Philadelphia,             | 50 10 3 455     |
| Baltimore,                | 101 13 3 940    |
| Valencia,                 | 166 8 1,784     |
| <b>Antimony—</b>          |                 |
| Bombay,                   | 2 cks.          |
| Riga,                     | 3 t.            |
| <b>Asbestos—</b>          |                 |
| Philadelphia,             | 2 cs.           |
| Smyrna,                   | 1 ck.           |
| Valparaiso,               | 1 ck.           |
| Vera Cruz,                | 1 bl. 1         |
| <b>Bleaching Powder—</b>  |                 |
| Ancona,                   | 6 cks.          |
| Baltimore,                | 121             |
| Beyrout,                  | 13 brls.        |
| Bombay,                   | 40 cs.          |
| Boston,                   | 893 30          |
| Ferrol,                   | 6               |
| Genoa,                    | 102             |
| Naples,                   | 18              |
| Newport News,             | 224             |
| New York,                 | 621             |
| Philadelphia,             | 19              |
| Pirans,                   | 12              |
| Rouen,                    | 94              |
| St. John's, N.B.,         | 25              |
| Tampico,                  | 35              |

|                    |                    |
|--------------------|--------------------|
| <b>Bone Waste—</b> |                    |
| Rouen,             | 3 t. 7 c. £25      |
| <b>Boric Acid—</b> |                    |
| Portland M.,       | 2 t. 3 c. 3 q. £44 |
| <b>Borax—</b>      |                    |
| Dunedin,           | 5 c. £6            |
| Bombay,            | 1 t. £20           |
| Portland, M.,      | 1 10 3 q. 50       |
| Rotterdam,         | 24 5 531           |
| Valparaiso,        | 3 5 2 66           |
| Barcelona,         | 5 3 101            |
| Yokohama,          | 3 9 65             |

|                           |                |
|---------------------------|----------------|
| <b>Calcined Magnesia—</b> |                |
| Lisbon,                   | 1 cs.          |
| <b>Calcium Chloride—</b>  |                |
| Odessa,                   | 10 t. 3 c. £23 |
| Brisbane,                 | 5 11           |
| <b>Caoutchouc—</b>        |                |
| New York,                 | 1 cs.          |
| Rio de Janeiro,           | 1              |
| <b>Carbolic Acid—</b>     |                |
| Hamilton,                 | 1 t. 5 c. £70  |
| Rotterdam,                | 17 791         |
| Constantinople,           | 5 2 q. 12      |
| Philadelphia,             | 2 10 146       |
| Venice,                   | 9 3 18         |
| Hioo,                     | 1 10           |

**LIVERPOOL.**

Week ending January 15th.

|                            |                       |
|----------------------------|-----------------------|
| <b>Alum—</b>               |                       |
| Lisbon,                    | 5 t. 2 c. 2 q. £23    |
| Halifax,                   | 2 4 3 10              |
| Cape Town,                 | 10 6 1 48             |
| San Francisco,             | 16 1 1 72             |
| Volo,                      | 3 1 14                |
| Varna,                     | 1 5 6                 |
| St. Maura,                 | 1 16 1 8              |
| Pineus,                    | 6 10 30               |
| Sydney,                    | 1 5                   |
| <b>Aluminous Cake—</b>     |                       |
| Alexandria,                | 7 t. 1 c. £27         |
| <b>Ammonium Carbonate—</b> |                       |
| Halifax,                   | 5 t. 6 c. £8          |
| Valparaiso,                | 10 18                 |
| Ancona,                    | 3 4                   |
| Ferrol,                    | 3 5                   |
| <b>Ammonium Chloride—</b>  |                       |
| Philadelphia,              | 19 t. 19 c. 3 q. £537 |
| Alexandria,                | 10 370                |



|                                         |                                  |                                |                                    |
|-----------------------------------------|----------------------------------|--------------------------------|------------------------------------|
| Yokohama, 6 18 358                      | Barcelona, 4 19 77               | Syra, 5 bgs.                   | Natal, 2,101                       |
| Hamburg, 8 6 446                        | Rouen, 9 15 150                  | Venice, 25                     | New York, 200                      |
| Rouen, 17 1 308                         | Nantes, 4 19 74                  | <b>Phosphorus—</b>             | Old Calabar, 1,000                 |
| Shanghai, 1 9 86                        | Paris, 19 13 297                 | Tampico, 5 c. £60              | Opobo, 1,600                       |
| Baltimore, 5 15 271                     | Seville, 26 13 3 497             | <b>Potassium Bichromate—</b>   | Paris, 180                         |
| <b>Caustic Soda—</b>                    | Marseilles, 16 1 2,525           | Rio de Janeiro, 10 c. 9 q. £25 | Pt. Elizabeth, 1,800               |
| Alicante, 40 dms.                       | Bordeaux, 25 16 4,002            | Copenhagen, 5 t. 9 2 206       | Portland, Me., 200                 |
| Amsterdam, 82                           | Certe, 857 14 15,109             | <b>Potassium Carbonate—</b>    | Pt. Natal, 796                     |
| Antwerp, 25 brls.                       | Naples, 23 2 424                 | Lisbon, 3 t. £75               | Pt. Said, 24                       |
| Baltimore, 200 85                       | <b>Disinfectants—</b>            | New York, 10 12 c. 211         | Rangoon, 15                        |
| Barcelona, 450                          | Bombay, 1 t. 9 c. £34            | Chicago, 1 19 46               | Rotterdam, 445                     |
| Bombay, 10                              | Rangoon, 10 5                    | <b>Potassium Chlorate—</b>     | St. Lucia, 75                      |
| Ceara, 30                               | Calcutta, 2 18 44                | Genoa, 10 c. £20               | St. Thomas, 1                      |
| Corunna, 8                              | <b>Gelatine—</b>                 | Lisbon, 4 t. 156               | Savannah, 4                        |
| Fiume, 135                              | New York, 255 bxs.               | Philadelphia, 2 10 100         | Shanghai, 7,332                    |
| Genoa, 110                              | <b>Glucose—</b>                  | Shanghai, 5 190                | Singapore, 25                      |
| Hamburg, 30                             | Cape Town, 30 cks.               | Rio de Janeiro, 4 8            | Valparaiso, 1                      |
| Hio, 200                                | <b>Glue—</b>                     | Leghorn, 1 4 46                | <b>Soda Alkali—</b>                |
| Leghorn, 85                             | Alexandria, 30 bgs.              | Oporto, 10 20                  | Barcelona, 35 brls.                |
| Lisbon, 50                              | New York, 50 bls.                | Yokohama, 11 5 434             | Bombay, 35                         |
| Malaga, 14                              | Shanghai, 9 cks.                 | Hio, 5 184                     | <b>Soda Ash—</b>                   |
| Melbourne, 27                           | <b>Gypsum—</b>                   | Rotterdam, 2 6 118             | Antwerp, 450 bgs.                  |
| Naples, 25                              | New York, 37 t. 6 c. £101        | New York, 41 5 1,192           | Baltimore, 2,272 259 tcs.          |
| New Orleans, 155                        | <b>Indigo Extract—</b>           | <b>Potassium Cyanide—</b>      | Bombay, 9 brls.                    |
| Paris, 37                               | Philadelphia, 12 c. £9           | Mollendo, 1 c. 3 q. £17        | Bordeaux, 25                       |
| Penang, 14                              | <b>Lime—</b>                     | <b>Potassium Prussiate—</b>    | Boston, 1,660 268 cks. 118         |
| Pernambuco, 25                          | Sierra Leone, 3 t. 15 c. £8      | Genoa, 3 t. 5 c. £230          | Callao, 40                         |
| Philadelphia, 50                        | <b>Litharge—</b>                 | Rio de Janeiro, 18 2 q. 60     | Copenhagen, 700 5                  |
| Rotterdam, 135                          | 1 t.                             | Naples, 5 19                   | Genoa, 300                         |
| St. John's, N.B., 50                    | <b>Magnesium Sulphate—</b>       | <b>Salt—</b>                   | Ghent, 1,920                       |
| San Francisco, 100                      | Malaga, 10 brls.                 | Akassa, 467 t. 10 c.           | Hamburg, 100                       |
| Savannah, 17                            | Porto Alegre, 2 cs.              | Algoa Bay, 17 17               | Havana, 2                          |
| Seville, 50                             | Portland, M., 5                  | Antwerp, 203                   | Maranham, 85 20 brls.              |
| Tampico, 60                             | Rio de Janeiro, 84               | Arcibo, 14                     | New York, 1,966 85 316 kgs.        |
| Valencia, 50                            | <b>Manure—</b>                   | Baltimore, 250                 | Oporto, 15                         |
| Venice, 20                              | Adelaide, 20 t. £70              | Boston, 150                    | Philadelphia, 434                  |
| Vera Cruz, 30                           | New York, 110 5 c. 1,120         | B. Ayres, 4 1                  | Portland, Me., 640                 |
| <b>Chemicals (otherwise undescrbed)</b> | Las Palmas, 14 127               | Cameroon, 3                    | Rio de Janeiro, 216                |
| Alexandria, 12 c. £15                   | <b>Muriatic Acid—</b>            | Cape Town, 120                 | Rotterdam, 700                     |
| Boston, 1 t. 17 121                     | Mollendo, 2 c. 3 q. £8           | Cape Lahou, 15                 | St. John's, N.B., 23               |
| Barcelona, 10 17                        | Bombay, 11 t. 15 150             | Conakry, 50                    | Tampico, 12 9 brls.                |
| Rotterdam, 10 17                        | <b>Paint—</b>                    | Demerara, 107 10               | Valparaiso, 25                     |
| Stettin, 1 2 34                         | Accra, 20 kgs.                   | E. London, 8 18                | Vigo, 15                           |
| Copenhagen, 2 2 69                      | Alexandria, 110 pkgs. 19 dms.    | Ghent, 100                     | <b>Soda Crystals—</b>              |
| New York, 5 4 2 q. 390                  | Amsterdam, 6 4                   | Lagos, 100                     | Boston, 50 bgs. 112 cks. 224 brls. |
| Lisbon, 17 18 20                        | Ambriz, 7 brls.                  | Lisbon, 3 5                    | Philadelphia, 167                  |
| Odessa, 17 18 20                        | Aracatz, 71                      | Monrovia, 5                    | Singapore, 20                      |
| Trieste, 3 5 28                         | Baltimore, 415 cks.              | N. Castle, NSW, 285            | <b>Sodium Acetate—</b>             |
| Genoa, 3 14 18                          | Benguella, 4 40                  | N. Orleans, 150                | Naples, 7 cks.                     |
| Syra, 1 10 18                           | Belize, 16                       | Newport News, 150              | <b>Sodium Arseniate—</b>           |
| Portland, M., 1 9 34                    | Cadiz, 5 cs.                     | New York, 1,440                | New York, 10 cks.                  |
| Hamburg, 2 9 17                         | Buenaventura, 33 dms.            | Opobo, 210                     | Rouen, 5                           |
| Nantes, 1 34                            | Calcutta, 2                      | Philadelphia, 1,005            | <b>Sodium Bicarbonate—</b>         |
| Venice, 1 34                            | Callao, 2                        | Portland, Me., 200             | Adelaide, 60 kgs.                  |
| <b>China Clay—</b>                      | E. London, 75 32                 | San Juan, 10                   | Baltimore, 600                     |
| Baltimore, 43 t. 50 cks.                | Gibraltar, 2                     | Sydney, 18                     | Barcelona, 300                     |
| Barcelona, 20                           | Havana, 2 20                     | Talcahuano, 5 1                | Bombay, 300                        |
| Bombay, 205 52                          | Hong Kong, 16 120                | Valparaiso, 2 15               | Brisbane, 40                       |
| Boston, 768 150                         | Iquique, 1 127                   | Vancouver, BC, 292 10          | B. Ayres, 25 cks.                  |
| Calcutta, 50                            | La Union, 1 198                  | <b>Salt Cake—</b>              | Gijon, 12                          |
| Colombo, 5                              | Malta, 15                        | Philadelphia, 70 t. 18 c. £119 | Lisbon, 40                         |
| Naples, 40                              | Maranham, 1                      | Baltimore, 70 14 90            | Malaga, 40                         |
| Philadelphia, 105                       | Mayaguez, 40 cs.                 | Para, 15 c. £18                | Palermo, 2                         |
| Portland, M., 96                        | Mossamedes, 1 2                  | Lisbon, 30 t. 1 3 q. 572       | Portland, M., 100                  |
| Rio de Janeiro, 16                      | Odessa, 16 9 pkgs.               | <b>Sheep Dip—</b>              | Rouen, 48                          |
| Zarate, 200                             | Panama, 21 brls.                 | Baltimore, 2 t. 6 c. £50       | St. John's, N.B., 50               |
| <b>Chrome Ore—</b>                      | Para, 21 brls.                   | Punta Arenas, 3 7 75           | Seville, 40                        |
| Dunkirk, 47 cks.                        | Puerto Cabello, 10               | B. Ayres, 29 14 205 dms. 908   | Venice, 100                        |
| <b>Coal Products—</b>                   | Punta Arenas, 400 150 bgs.       | Natal, 1 7 56                  | <b>Sodium Bichromate—</b>          |
| Aniline Colours                         | St. John's, N'd'd., 60 123 pkgs. | <b>Slag—</b>                   | Syra, 3 brls.                      |
| Barcelona, 2 kgs. 5 cs.                 | St. Thomas, 65                   | Bordeaux, 25 t.                | <b>Sodium Carbonate—</b>           |
| New York, 6 1 51 cks.                   | Salt Pond, 26                    | <b>Soap—</b>                   | New York, 56 brls.                 |
| Aniline Oil                             | San Francisco, 26 2 brls.        | Adelaide, 10 bxs.              | Puerto Cabello, 6 kgs.             |
| Barcelona, 2 dms. 31 cks.               | San Juan, 5                      | Akassa, 56 20 kgs. 20 cs.      | <b>Sodium Chlorate—</b>            |
| Aniline Salts                           | San Sebastian, 30                | Alexandria, 3,945 130          | Rotterdam, 2 kgs.                  |
| Barcelona, 3 cks.                       | San Thome, 1 ble. 4              | Algoa Bay, 40                  | Santos, 1                          |
| Bombay, 1 cs.                           | Sherbro, 2 4 dms.                | Amsterdam, 5                   | Tampico, 2 cks.                    |
| Boston, 60                              | Sierra Leone, 116                | Barbadoes, 1,300               | <b>Sodium Silicate—</b>            |
| <b>Creosote Salts</b>                   | Smyrna, 6                        | Barranquilla, 50               | Piraeus, 10 brls.                  |
| Philadelphia, 543 bgs.                  | Sourabaya, 66 20                 | Belize, 20                     | Volo, 10                           |
| <b>Tar</b>                              | Tampico, 100 cs. 17 brls.        | Bombay, 2,260 48               | <b>Sodium Sulphate—</b>            |
| Philadelphia, 200 brls.                 | Yokohama, 8                      | B. Ayres, 1                    | Bombay, 8 cks.                     |
| <b>Cobalt Oxide—</b>                    | <b>Painters' Colours—</b>        | Calcutta, 1 ck. 10 250 bds. 34 | Boston, 28 300 bgs.                |
| Rotterdam, 4 c. £100                    | Alexandria, 24 dms.              | C. C. Castle, 150              | <b>Spent Oxide—</b>                |
| <b>Copperas—</b>                        | Belize, 2 cks.                   | Cape Town, 1,201 10            | Antwerp, 75 t. 18 c. £1            |
| Smyrna, 5 t. 5 c. £9                    | Calcutta, 10 70 dms.             | Constantinople, 2              | <b>Starch—</b>                     |
| Patras, 8 9 15                          | Colon, 14 6                      | Copenhagen, 30                 | Alexandria, 1 bg.                  |
| San Francisco, 10 22                    | Corfu, 1 cs. 5 tcs.              | Demerara, 4 085                | Corunna, 4 cs.                     |
| <b>Copper Sulphate—</b>                 | Ghent, 6 5 tcs.                  | Durban, 50                     | St. John's, N'd'd., 80             |
| Vera Cruz, 30 t. £495                   | Hong Kong, 73 4 kgs. 1 cs.       | E. London, 1,601               | <b>Strontia—</b>                   |
| Palermo, 7 8 c. 114                     | Lisbon, 17 16                    | Genoa, 100                     | Hamburg, 1 t. 17 c. £              |
| Bona, 4 19 84                           | Manaos, 7 60                     | Gibraltar, 469                 | <b>Sulphur—</b>                    |
| Oran, 4 19 83                           | Melbourne, 30 200 brls.          | Guayaquil, 620                 | Victoria, B. C., 2 t.              |
| Venice, 14 18 235                       | N. Orleans, 30                   | Great River, 75                | Halifax, 100 1 c.                  |
| Odessa, 2 1 39                          | <b>Paraffin Wax—</b>             | Havre, 27                      | Philadelphia, 150 3                |
| Oporto, 20 2 3 q. 519                   | Rio de Janeiro, 4 cs.            | Kingston, 3,183                | Lisbon, 0                          |
| Algiers, 34 9 3 23                      | Santos, 10                       | Las Palmas, 224                | Boston, 250 7                      |
| Catania, 1 9 2 23                       |                                  | Manaos, 250                    | New York, 1 18 2 q.                |
| Bari, 21 15 327                         |                                  | Messina, 2 pns.                |                                    |
| Ancona, 7 18 3 161                      |                                  | Mollendo, 20                   |                                    |
| Genoa, 9 19 1 85                        |                                  |                                |                                    |
| Leghorn, 4 19 3 155                     |                                  |                                |                                    |
| Dunkirk, 9 10 3 21                      |                                  |                                |                                    |
| Amsterdam, 1 8 21                       |                                  |                                |                                    |



|                         |               |      |
|-------------------------|---------------|------|
| <b>Sulphuric Acid—</b>  |               |      |
| Celombo,                | 2 t. 14 c.    | £16  |
| Maranham,               | 7             | 4    |
| <b>Superphosphates—</b> |               |      |
| Las Palmas,             | 2 t. 13 c.    | £114 |
| Cullera,                | 118           | 266  |
| <b>Treacle—</b>         |               |      |
| Antwerp,                | 35 hf. pns.   |      |
| Ghent,                  | 35            |      |
| Rotterdam,              | 50 brls.      |      |
| Ternenzen,              | 10 33 pkgs.   |      |
| <b>Yarnish—</b>         |               |      |
| Lisbon,                 | 2 cs.         |      |
| Paris,                  | 5             |      |
| Piræus,                 | 1             |      |
| Puerto Cabello,         | 2             |      |
| Smyrna,                 | 10 dms.       |      |
| Tampico,                | 1             |      |
| <b>White Lead—</b>      |               |      |
| Santa Catherina,        | 60 kgs.       |      |
| <b>Whiting—</b>         |               |      |
| Valparaiso,             | 50 brls.      |      |
| <b>Zinc Chloride—</b>   |               |      |
| Trieste,                | 1 t. 5 c. 3 q | £16  |
| Bombay,                 | 2 5 2         | 34   |

**MANCHESTER.**

Week ending January 15th.

|                                          |                  |  |
|------------------------------------------|------------------|--|
| <b>Acids—</b>                            |                  |  |
| Bombay,                                  | 14 cs.           |  |
| <b>Aniline Colours—</b>                  |                  |  |
| Rotterdam,                               | 3 cks.           |  |
| <b>Aniline Salt—</b>                     |                  |  |
| Hamburg,                                 | 10 brls. 8 pns.  |  |
| <b>Chemicals (otherwise undescribed)</b> |                  |  |
| Alexandria,                              | 35 cks. 50 brls. |  |
| Beyrout,                                 | 25               |  |
| Jaffa,                                   | 34 dms.          |  |
| Mersyne,                                 | 40               |  |
| Rotterdam,                               | 2 8              |  |
| Tunis,                                   | 14               |  |
| Antwerp,                                 | 2 12 kgs.        |  |
| Bombay,                                  | 4                |  |
| <b>Coal Products (otherwise undes.)—</b> |                  |  |
| St. Nazaire,                             | 620 t.           |  |
| Treport,                                 | 2 cks.           |  |
| Hamburg,                                 | 17               |  |
| Rotterdam,                               | 85               |  |
| <b>Dyestuffs (otherwise undescribed)</b> |                  |  |
| Bessorah,                                | 3 cs. 2 kgs.     |  |
| <b>Linseed Oil—</b>                      |                  |  |
| Alexandria,                              | 45 brls.         |  |
| Bussorah,                                | 24 dms.          |  |
| <b>Paint—</b>                            |                  |  |
| Bussorah,                                | 1 kg.            |  |
| <b>Painters' Colours—</b>                |                  |  |
| Larnaca,                                 | 1 ck.            |  |
| <b>Pitch—</b>                            |                  |  |
| Cette,                                   | 270 t. 12 c.     |  |
| <b>Slag—</b>                             |                  |  |
| Rotterdam,                               | 250 t.           |  |
| <b>Soap—</b>                             |                  |  |
| Hamburg,                                 | 2 pns.           |  |
| <b>Tallow—</b>                           |                  |  |
| Rotterdam,                               | 7 cks.           |  |
| <b>Tar Oil—</b>                          |                  |  |
| Rotterdam,                               | 30 dms.          |  |
| Treport,                                 | 22               |  |
| <b>Turpentine—</b>                       |                  |  |
| Bussorah,                                | 18 dms.          |  |

**HULL.**

Week ending January 11th.

|                           |          |  |
|---------------------------|----------|--|
| <b>Alkali—</b>            |          |  |
| Gothenburg,               | 40 bgs.  |  |
| Hango,                    | 3 cks.   |  |
| Palermo,                  | 7        |  |
| Trieste,                  | 10       |  |
| <b>Ammonium Sulphate—</b> |          |  |
| Dunkirk,                  | 783 bgs. |  |
| Ghent,                    | 300      |  |
| Hamburg,                  | 100      |  |
| Rotterdam,                | 420      |  |
| <b>Anthracene—</b>        |          |  |
| Rotterdam,                | 53 cks.  |  |
| <b>Benzol—</b>            |          |  |
| Amsterdam,                | 24 dms.  |  |
| <b>Caustic Soda—</b>      |          |  |
| Bari,                     | 17 dms.  |  |
| Fiume,                    | 20       |  |
| Hango,                    | 86       |  |
| Venice,                   | 100      |  |

**Chemicals (otherwise undes.)—**

|                        |              |  |
|------------------------|--------------|--|
| Hamburg,               | 7 pks.       |  |
| Boston,                | 100 43 cks.  |  |
| Christiania,           | 14 692 slabs |  |
| Copenhagen,            | 20 5         |  |
| Drontheim,             | 1 8 cs.      |  |
| Gothenburg,            | 1            |  |
| Hango,                 | 10 70        |  |
| Hamburg,               | 1            |  |
| Konigsberg,            | 1            |  |
| Messina,               | 8            |  |
| New York,              | 12 83        |  |
| Rotterdam,             | 6 50         |  |
| Antwerp,               | 1 3          |  |
| Amsterdam,             | 45 4 3       |  |
| Alexandria,            | 100          |  |
| Bari,                  | 10           |  |
| Bergen,                | 13 7         |  |
| Reval,                 | 50 50 1      |  |
| <b>Cottonseed Oil—</b> |              |  |
| Antwerp,               | 1,200 c.     |  |
| Amsterdam,             | 990          |  |
| Bremen,                | 254          |  |
| Copenhagen,            | 269          |  |
| Hamburg,               | 339          |  |
| Rotterdam,             | 461          |  |
| Stettin,               | 200          |  |
| Stavanger,             | 145          |  |

**Dyestuffs (otherwise undescribed)**

|          |       |  |
|----------|-------|--|
| Antwerp, | 1 ck. |  |
| Boston,  | 69    |  |

**Glue—**

|        |        |  |
|--------|--------|--|
| Ghent, | 4 bgs. |  |
|--------|--------|--|

**Linseed Oil—**

|                |        |  |
|----------------|--------|--|
| Christiania,   | 340 c. |  |
| Christiansund, | 49     |  |
| Drontheim,     | 145    |  |
| Fiume,         | 109    |  |
| Hamburg,       | 275    |  |
| Rotterdam,     | 294    |  |
| Trieste,       | 177    |  |

**Manure—**

|           |         |  |
|-----------|---------|--|
| Bordeaux, | 50 bgs. |  |
| Venice,   | 762 t.  |  |

**Naphtha—**

|             |        |  |
|-------------|--------|--|
| Copenhagen, | 3 dms. |  |
|-------------|--------|--|

**Painters' Colours—**

|          |         |  |
|----------|---------|--|
| Antwerp, | 31 cks. |  |
|----------|---------|--|

**Pitch—**

|          |           |  |
|----------|-----------|--|
| Antwerp, | 1 50 dms. |  |
|----------|-----------|--|

**Salt—**

|          |        |  |
|----------|--------|--|
| Antwerp, | 1 pke. |  |
|----------|--------|--|

**Tallow—**

|            |            |  |
|------------|------------|--|
| Hango,     | 1 14 cs.   |  |
| Hamburg,   | 46 250     |  |
| New York,  | 46 19      |  |
| Rotterdam, | 4 140 dms. |  |

**Trieste,****Pitch—**

|          |        |  |
|----------|--------|--|
| Antwerp, | 136 t. |  |
| Dunkirk, | 370    |  |

**Salt—**

|         |       |  |
|---------|-------|--|
| Smogen, | 50 t. |  |
|---------|-------|--|

**Tallow—**

|             |           |  |
|-------------|-----------|--|
| Gothenburg, | 37 cks. f |  |
|-------------|-----------|--|

**Tar—**

|          |         |  |
|----------|---------|--|
| Antwerp, | 25 cks. |  |
|----------|---------|--|

**Tar Oil—**

|             |         |  |
|-------------|---------|--|
| Gothenburg, | 10 cks. |  |
|-------------|---------|--|

**Treacle—**

|              |         |  |
|--------------|---------|--|
| Bergen,      | 25 cks. |  |
| Christiania, | 25      |  |

**Yarnish—**

|             |       |  |
|-------------|-------|--|
| Antwerp,    | 1 ck. |  |
| Gothenburg, | 1 dm. |  |
| Hamburg,    | 1 cs. |  |
| Harlingen,  | 1     |  |
| Rotterdam,  | 2     |  |

**GLASGOW.**

Week ending January 16th.

|                            |                  |  |
|----------------------------|------------------|--|
| <b>Acid—</b>               |                  |  |
| Bombay,                    | £26              |  |
| U.S.A.,                    | 35               |  |
| <b>Albumen—</b>            |                  |  |
| U.S.A.,                    | £249             |  |
| <b>Ammonia (Liquid)—</b>   |                  |  |
| Rosario,                   | £22              |  |
| <b>Ammonium Sulphate—</b>  |                  |  |
| Valencia,                  | 100 t. 17 3/4 c. |  |
| Venice,                    | 55 11            |  |
| Hamburg,                   | 101 6            |  |
| Demerara,                  | 294 10 1/2       |  |
| <b>Antimony—</b>           |                  |  |
| Canada,                    | 1 t.             |  |
| <b>Boiler Composition—</b> |                  |  |
| Bombay,                    | £38              |  |

**Bleaching Powder—**

|         |                |  |
|---------|----------------|--|
| Bombay, | 6 t. 12 3/4 c. |  |
|---------|----------------|--|

**Caustic Soda—**

|               |                |  |
|---------------|----------------|--|
| Philadelphia, | 35 t. 1 3/4 c. |  |
|---------------|----------------|--|

**Coal Products—****Cresote Oil**

|         |     |  |
|---------|-----|--|
| U.S.A., | £20 |  |
|---------|-----|--|

**Pitch—**

|         |      |  |
|---------|------|--|
| Ancona, | £550 |  |
|---------|------|--|

**Bombay,****Venice,****Hamburg,****Antwerp,****Santander,****Calcutta,****Tar****Christiana,****Madras,****Copperas—****Bombay,****Glucose—****U.S.A.,****Iron Sulphate—****Bombay,****Lead Acetate—****Bombay,****Calcutta,****Linseed Oil—****Kingston, Jam.,****Canada,****Trinidad,****Litharge—****Bombay,****Canada,****Johannesburg,****Manganese Oxide—****U.S.A.,****Manure—****Berbec,****Paint—****Havana,****Malta,****U.S.A.,****Bombay,****Calcutta,****Colombo,****Yokohama,****Algoa Bay,****Painters' Colours—****Bombay,****Cape Colony,****E. London,****Natal,****Bangkok,****Calcutta,****Cape Town,****Paraffin Wax—****Barcelona,****Cape Town,****Fiume,****Leghorn,****Venice,****Madras,****Potassium Bichromate—****Bombay,****Venice,****Antwerp,****Calcutta,****Potassium Phosphate—****Valencia,****Soap—****New York,****Sodium Bichromate—****Bari,****Bombay,****Antwerp,****Calcutta,****Sulphuric Acid—****Demerara,****Madras,****Trinidad,****Tallow—****E. London,****Tin Bichloride—****Bombay,****Treacle—****King Wm's Town,****Pt. Elizabeth,****Christiania,****White Lead—****Calcutta,****M. Video,****Shanghai,****TYNE.**

Week ending January 11th.

|                |            |  |
|----------------|------------|--|
| <b>Alkali—</b> |            |  |
| Rotterdam,     | 1 t. 12 c. |  |

**Anthracene—**

|            |            |  |
|------------|------------|--|
| Rotterdam, | 18 t. 1 c. |  |
|------------|------------|--|

**Barytes—**

|            |       |  |
|------------|-------|--|
| Rotterdam, | 97 t. |  |
|------------|-------|--|

**Blanc Fixe—**

|           |           |  |
|-----------|-----------|--|
| Bordeaux, | 5 t. 1 c. |  |
|-----------|-----------|--|

**Bleaching Powder—**

|          |             |  |
|----------|-------------|--|
| Antwerp, | 32 t. 18 c. |  |
|----------|-------------|--|

**Christiania,****Gothenburg,****Drontheim,****Rotterdam,****Libau,****Venice,****Carbolic Acid—**

|            |            |  |
|------------|------------|--|
| Rotterdam, | 5 t. 13 c. |  |
|------------|------------|--|

**Caustic Soda—**

|          |            |  |
|----------|------------|--|
| Antwerp, | 4 t. 18 c. |  |
|----------|------------|--|

**Hamburg,****Gothenburg,****Aalborg,****Copenhagen,****Rotterdam,****Colours—**

|                 |           |  |
|-----------------|-----------|--|
| Civita Vecchia, | 1 t. 7 c. |  |
|-----------------|-----------|--|

**Manure—**

|           |             |  |
|-----------|-------------|--|
| Valencia, | 115 t. 8 c. |  |
|-----------|-------------|--|

**Bordeaux,****Venice,****Paint—**

|          |      |  |
|----------|------|--|
| Antwerp, | 6 t. |  |
|----------|------|--|

**Soda—**

|            |           |  |
|------------|-----------|--|
| Rotterdam, | 5 t. 2 c. |  |
|------------|-----------|--|

**Aarhuus,****Nykjobing,****Soda Ash—**

|         |           |  |
|---------|-----------|--|
| Venice, | 5 t. 5 c. |  |
|---------|-----------|--|

**Sulphur—**



WEDNESDAY, JAN. 22ND, 1896.

*The values stated are F.O.R. at maker's works, or at usual ports of shipment in U.K. The price in different localities may vary.*

£ s. d.

|                                 |         |            |    |    |    |
|---------------------------------|---------|------------|----|----|----|
| Lime, Acetate (brown) (ex ship) | .. .. . | per ton    | 5  | 2  | 6  |
| " " (grey) (ex ship)            | .. .. . | "          | 7  | 15 | 0  |
| Magnesium (ribbon and wire)     | .. .. . | per oz.    | 0  | 2  | 3  |
| " Chloride (ex ship)            | .. .. . | per ton    | 2  | 7  | 6  |
| " Carbonate .. .. .             | .. .. . | per cwt.   | 1  | 17 | 6  |
| " Hydrate .. .. .               | .. .. . | per ton    | 17 | 0  | 0  |
| " Sulphate (Epsom Salts)        | .. .. . | per ton    | 2  | 15 | 0  |
| Manganese, Sulphate .. .. .     | .. .. . | "          | 17 | 0  | 0  |
| " Borate .. .. .                | .. .. . | per cwt.   | 2  | 15 | 0  |
| " Ore, 70 % .. .. .             | .. .. . | per ton    | 3  | 10 | 0  |
| Methylated Spirit, 61° O.P.     | .. .. . | per gallon | 0  | 1  | 9  |
| Naphtha (Wood), Solvent .. .. . | .. .. . | "          | 0  | 3  | 0  |
| " Miscible, 60° O.P.            | .. .. . | "          | 0  | 2  | 11 |

|                                                               |              |    |    |    |
|---------------------------------------------------------------|--------------|----|----|----|
| Cotton-seed .. .. .                                           | per ton      | 17 | 10 | 0  |
| Linseed .. .. .                                               | per ton      | 21 | 0  | 0  |
| Petroleum, American .. .. .                                   | per gallon   | 0  | 0  | 7½ |
| Stearine .. .. .                                              | per ton      | 24 | 10 | 0  |
| Phosphorus (yellow) .. .. .                                   | per lb.      | 0  | 2  | 2  |
| (red) .. .. .                                                 | per lb.      | 0  | 2  | 8  |
| Potassium (metal) .. .. .                                     | per oz.      | 0  | 3  | 7  |
| " Bichromate .. .. .                                          | per lb.      | 0  | 0  | 4½ |
| " Carbonate, 90% (ex ship) .. .. .                            | per ton      | 17 | 5  | 0  |
| " Chlorate .. .. .                                            | per lb.      | 0  | 0  | 4½ |
| " Cyanide, 98% .. .. .                                        | per ton      | 0  | 1  | 4  |
| " Hydrate (Caustic Potash) 90% .. .. .                        | per ton      | 24 | 10 | 0  |
| "                  (Caustic Potash) 75/80% .. .. .            | per ton      | 21 | 10 | 0  |
| "                  (Caustic Potash) 70/75% .. .. .            | per ton      | 20 | 0  | 0  |
| " Nitrate (refined) .. .. .                                   | per cwt.     | 1  | 1  | 6  |
| " Permanganate .. .. .                                        | per cwt.     | 3  | 7  | 6  |
| " Prussiate Yellow .. .. .                                    | per lb.      | 0  | 0  | 8  |
| " Sulphate, 90% (ex ship) .. .. .                             | per ton      | 9  | 15 | 0  |
| " Muriate, 80% (do.) .. .. .                                  | per ton      | 8  | 10 | 0  |
| Silver (metal) .. .. .                                        | per oz.      | 0  | 2  | 6½ |
| " Nitrate .. .. .                                             | per oz.      | 0  | 2  | 0  |
| Sodium (metal) .. .. .                                        | per lb.      | 0  | 2  | 11 |
| " Carb. (refined Soda-ash) 48% .. .. .                        | per ton      | 4  | 15 | 0  |
| "                  (Caustic Soda-ash) 48% .. .. .             | per ton      | 4  | 5  | 0  |
| "                  (Carb. Soda-ash) 48% .. .. .               | per ton      | 4  | 0  | 0  |
| "                  (Alkali) 58% .. .. .                       | per ton      | 3  | 15 | 0  |
| "                  (Soda Crystals) .. .. .                    | per ton      | 2  | 2  | 6  |
| " Acetate (ex-ship) .. .. .                                   | per ton      | 14 | 10 | 0  |
| " Arseniate, 45% .. .. .                                      | per ton      | 12 | 0  | 0  |
| " Chlorate .. .. .                                            | per lb.      | 0  | 0  | 6½ |
| " Borate (Borax) .. .. .                                      | net, per ton | 19 | 0  | 0  |
| " Bichromate .. .. .                                          | per lb.      | 0  | 0  | 3½ |
| " Hydrate (77% Caustic Soda) (f.o.b.) net pr. ton .. .. .     | per ton      | 9  | 7  | 6  |
| "                  (74% Caustic Soda) .. .. .                 | per ton      | 8  | 10 | 0  |
| "                  (70% Caustic Soda) .. .. .                 | per ton      | 7  | 10 | 0  |
| "                  (60% Caustic Soda) .. .. .                 | per ton      | 6  | 10 | 0  |
| "                  (60% Caustic Soda, cream) (f.o.b.) .. .. . | per ton      | 6  | 10 | 0  |
| " Bicarbonate .. .. .                                         | per ton      | 6  | 10 | 0  |
| " Hyposulphite .. .. .                                        | per ton      | 5  | 10 | 0  |
| " Manganate, 30% .. .. .                                      | per ton      | 16 | 0  | 0  |
| " Nitrate (95%) ex-ship Liverpool .. .. .                     | per cwt.     | 0  | 7  | 6  |
| " Nitrite, 98% .. .. .                                        | per ton      | 30 | 0  | 0  |
| " Phosphate .. .. .                                           | per ton      | 13 | 5  | 0  |
| " Silicate (glass) .. .. .                                    | per ton      | 4  | 10 | 0  |
| "                  (liquid, 100° Tw.) .. .. .                 | per ton      | 3  | 10 | 0  |
| " Stannate, 40% .. .. .                                       | per cwt.     | 3  | 2  | 9  |
| " Sulphate (Salt-cake) .. .. .                                | per ton.     | 1  | 7  | 6  |
| "                  (Glauber's Salts) .. .. .                  | per ton      | 1  | 10 | 0  |
| " Sulphide .. .. .                                            | per ton      | 8  | 0  | 0  |
| " Sulphite .. .. .                                            | per ton      | 5  | 5  | 0  |
| Strontium Hydrate, 100% .. .. .                               | per ton      | 8  | 10 | 0  |
| Sulphocyanide Ammonium, 95% .. .. .                           | per lb.      | 0  | 0  | 6½ |
| " Barium, 95% .. .. .                                         | per lb.      | 0  | 0  | 4½ |
| " Potassium .. .. .                                           | per lb.      | 0  | 0  | 7  |
| Sulphur (Flowers) .. .. .                                     | per ton.     | 6  | 15 | 0  |
| " (Roll Brimstone) .. .. .                                    | per ton      | 5  | 0  | 0  |
| " Brimstone: Best Quality .. .. .                             | per ton      | 3  | 12 | 6  |
| Superphosphate of Lime (26%) .. .. .                          | per ton      | 2  | 7  | 6  |
| Tallow .. .. .                                                | per ton      | 23 | 10 | 0  |
| Tin Crystals .. .. .                                          | per lb.      | 0  | 0  | 5½ |
| " English Ingots .. .. .                                      | per ton      | 63 | 10 | 0  |
| Zinc (Spelter) .. .. .                                        | per ton      | 14 | 2  | 6  |
| " Chloride (solution, 100° Tw.) .. .. .                       | per ton      | 5  | 5  | 0  |



# THE CHEMICAL TRADE JOURNAL

AND  
OIL, PAINT and COLOUR REVIEW.

Publishing Offices: 32, BLACKFRIARS STREET, MANCHESTER.

No. 454.

SATURDAY, FEBRUARY 1, 1896.

Vol. XVIII.

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WILL BE ISSUED WITH NO. 457, FEBRUARY 22, 1896.

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## CURRENT TOPICS.

### THE DANGERS OF IGNORANCE.

FROM time to time accidents happen which bring out strikingly the serious danger which attends "gassing," and we have again quite recently had two cases in which no less than eight lives have been lost, mainly owing to the ignorance which appears to prevail about the best method of dealing with such cases, or trying to effect a rescue. To those who have given attention to the matter, it must be somewhat wearying to read the same description for every accident, even though there is a lapse of some months between each. To take the recent accident at Tynemouth, which occurred while the purifying boxes at the gasworks were being cleaned. One man enters the box, and is overcome by sulphuretted hydrogen. A comrade at once follows, to give assistance, and he, too, falls a victim. In the same way six men essay, and fail, and then—and then only—the usual alarm is raised, and medical aid called in. Steps are taken to clear the room or building from sulphuretted hydrogen, as the case may be, and then artificial respiration is resorted to, in the case in point with limited success, for three only out of the eight who were overcome were revived. In the Widnes case two men were overcome in a sewer, and a third man who went to their assistance was likewise rendered insensible. Their deaths were only indirectly due to the sulphuretted hydrogen, as, when they were overpowered, they appear to have fallen into the water in the sewer and been drowned before they could be rescued.

After what we have said in the past about the use of the oxygen bottle in cases of "gassing," we are somewhat curious to know whether in the Tynemouth instance the remarkable power of oxygen in restoring respiration was made use of. If it was not, it is high time the medical profession were put through a course of "technical education." It is indeed in this connection that technical education is most painfully wanted, and would be really useful. The ignorance which prevails is really astonishing, and although much has been done to increase our knowledge of the best way of treating those who have been "gassed," little of the knowledge seems to have found its way into practice. Just now we have a very well-meaning committee actively engaged in inquiring into the dangers attending occupation in chemical and other works, and the results of the last two days would indicate that there was greater need for attention to the "other" than to the chemical works, for although there is ample room in the chemical trade for advancing the spread of knowledge regarding the treatment of gaseous poisoning, it seems that the majority of those connected with chemical works are highly educated in these matters when compared with the striking ignorance which is being constantly revealed in other industries. Though we are inclined to think that many of the so-called dangers of chemical works are un-



warrantably exaggerated, we are perfectly open to admit that "gassing" is one of the most formidable risks which attend occupation in the chemical trade. Those who have never witnessed the effects of sulphuretted hydrogen have no idea how suddenly it acts. We have known a case where to all appearances a man who had had "a mouthful" has been all right, and has protested against any remedial measures being adopted, and yet before he had walked away a dozen yards suddenly collapsed, and fell in a heap, absolutely insensible. Experience alone can enable a manager or other responsible person to judge rightly the necessity of taking prompt precautions in cases of "gassing," and in preventing the repetition of such lamentable accidents as we have had during the past few weeks. We are inclined to think that it would be far more useful if a great many of the rules and regulations which are now so prominently displayed in almost every works that come under the Factory Acts, were supplanted by an explanation of the toxical effects of sulphuretted hydrogen, producer gas, carbon dioxide and nitrous fumes, and a code of regulations for the treatment of all these forms of "gassing." With regard to the rescuing, it seems to us that the negligence which is constantly displayed is decidedly culpable, for there are many appliances (which we are not going to advertise here) that could, and ought to be, always kept ready for use in such cases. It is not as if the case in question was the first, the second, or the third; it is unfortunately one of many, in each of which the same tale is always told. First, one man succumbs unexpectedly to the gas, and then one, two, three, like sheep over a style, away go the would-be rescuers, and, of course, in turn fall victims to the gas. Occasionally the describer of the accident even goes into heroics over the brave volunteers, but in no one single case have we so far been able to find any mention of the hopeless ignorance which leads to such fatuous foolhardiness and futile sacrifice of life. It would be far more to the point if the space devoted to such eulogies were devoted to circulating knowledge about the use of respirators and oxygen in rescuing and restoring the victims.

#### THE LATEST PHOTOGRAPHICAL ADVANCE.

The interesting outcome of Röntgen's amplification of the discoveries made by Professor Crookes in 1879, and Seward in 1890, does not promise to be of great practical value to the chemical trade, but it is sufficiently important from both a scientific and practical point of view to merit brief reference here. As is often the case, the application of the Röntgen's researches was found out by accident.

We shall be sorry if the daily press become too wildly and enthusiastically enamoured of this new process of photography as, though it is full of possibilities, they are in many cases only such as yet. We have not forgotten how aluminium suffered by the uncurbed exuberance of the newspaper correspondent's imagination, and as this new discovery is so full of promise we should like it to have a fair field. We could suggest many pleasingly fanciful ways in which this new discovery might be utilised, but for the nonce we will practice our precept and perpend. We understand that by the applications that have been proved feasible by experiment, surgery is likely to be benefited, while it has been demonstrated that flaws and joints in metals are made visible. This is a great boon, but it does not prove that in future a photogramic record will be made of every yard of railway metal turned out of all the steel works in the country. As we have just said, the possibilities of the process are

great, and varied, and though we shall participate heartily in the rejoicing over each new triumph, we shall be sorry to see the edge of the zest taken off by premature indulgence in exaggerated expectations.

#### THE NATIVE GUANO COMPANY.

The annual report of the directors of this estimable company blossoms forth year by year with all the regularity of a hardy annual, and the comparison holds good in another sense, for it must indeed be a very "hardy" company that can exist for 28 years without ever paying a single penny in the way of dividend. The object of the company is undoubtedly a good one. It is a worthy aim to endeavour to treat sewage, and so solve one of the most difficult problems of the present century, and to do so, moreover, in a way which will render the manurial constituents available for restoration to the land from which they were originally taken. But, unfortunately, the past 28 years show that the results have been distinctly negative as far as the solution of the sewage problem is concerned. The chairman, in his address, speaks well of the prospects of the company, but we cannot help thinking that the silent protest of the last decade speaks even more forcibly. The chairman deals with "ought-to-be's," and aspirations, but the past with facts only. It is certainly very discouraging for the company's "native guano" to find so little favour with "native" agriculturists, and it is a very pretty calculation which the chairman makes when showing that by their process the fertilizing products in the sewage of the Metropolis restored to the soil to grow wheat, to be sold at 27s. per quarter, would realise the sum of £1,350,000. per annum.

On one or two points we cannot help taking exception to the report. To say that the testimony of a man who bears witness to their effluent being bright and clear, but admits he has never analysed it, *proves* that the process is absolutely perfect, is a rather sweeping assertion. The patents of the company are, it seems, gradually expiring, but the chairman says that he does not care very much for the patents, "for we have," he adds, "an experience and knowledge which is locked up in the minds of the officials of our company which we consider worth more than the patents." Very likely so, but, taking one thing with another, we think it is about time it was unlocked, and certainly our sympathies are with the shareholder who admitted it was very pleasing to hear that such good results had been obtained wherever their guano had been used, and granted the chairman's calculations were very interesting, but wished to point out that he had been waiting about a dozen years for a dividend which seemed to him as far off as ever. We quite agree with him, that though it may not be the fault of the process that the guano does not sell well, there must be something wrong somewhere, if out of the 300 towns which have been communicated with, not one could be persuaded to adopt the company's process. The chairman's calculations only apply to London sewage, and are of very little value unless placed side by side with the cost of treating the sewage of, say, Manchester, Salford, Bury, or Bradford, and the quantity of wheat the resulting "guano" would grow. We have not the slightest reason for wishing the process anything but good, but 28 years is a long time and it is as discouraging as it is remarkable that in such long while so promising a process should make so little headway.

SOCIETY OF CHEMICAL INDUSTRY.—*London Section.*—At the next meeting of the Society, which will be held as usual at Burlington House, at 8 p.m., on Monday, February 3rd, Mr. W. F. Reid will present a paper on "The Manufacture of Linoleum."



## The Patent List.

*List is compiled from Official sources in the Manchester Laboratory, under the immediate supervision of T. Davis and Alfred R. Davis, who report professionally value of Chemical Patents.*

### SPECIFICATIONS FOR ENGLISH LETTERS PATENT.

and Purifying Water. J. H. Williams. 821. January 13.  
for Producing Coke with or without Apparatus for Collecting by-products. G. W. Breffitt and F. G. Trebaine. 841. January 13.  
in Obtaining CO<sub>2</sub> from Gaseous Mixtures. W. Raydt. January 13.  
in the Discharge of Salts, etc., from Evaporators. J. 923. January 14.  
of Cyanogen Compounds. A. von Rad and J. Rosenfels. 1,022. January 15.  
Apparatus for the Filtration of Sewage. R. E. von Lengerke. January 15.  
Grifiers and Grease Catchers. W. Reeves and The Reeves Patent Co., Ltd. 1,041. January 15.  
g Metals by Electricity from weak Solutions and Concentrating electrolyte. J. C. Graham. 1,068. January 15.  
the By-products of Sugar Works. M. Sachs. 1,101. Jan. 16.  
in Electrodes. W. Heraeus. 1,144. January 16.  
in Vessels to contain Acids or other Chemicals. D. M. 1,125. January 17.  
of Gold, Lead, Silver, and Zinc from their Ores. J. Armstrong. January 17.  
aring Silico-Fluoride of Ammonia. W. Mills. 1,275. Jan. 18.

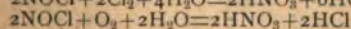
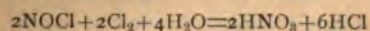
### FACTS OF LATEST COMPLETE SPECIFICATIONS.

*Abstracts are specially prepared for the Chemical Trade Journal RIGHTS of publication are RESERVED. This is the earliest abstracts of Chemical and allied patents accessible to the*

ents in the Production of Chlorine. J. Y. Johnson, 47, Lincoln's elds, London (communicated by the Verein Chemischer Fabrik, tim, Germany). Eng. Pat. 4,267. February 27, 1895.

ent deals with certain improvements in the nitric acid the production of chlorine described in patent 10,604/94. operations described in the latter patent are carried out in ng vessels arranged horizontally instead of vertically only nitric and sulphuric acid mixture to combine with the HCl dded to each vessel, which, in the case of three, means that es are in the proportions 69:23:8. Moreover, the vessels are ch a size that the acid mixture is saturated with HCl after on between the nitric and hydrochloric acids has been . The resulting mixture is run off into a closed vessel, and 130°C to drive off the nitrogen compounds. This end may mplished by adding a solution of HCl and then heating, ase the capacity of the decomposers need not be so great, s no necessity to provide for the saturation of the acid ith gaseous HCl as described above. It appears that the phuric acid produced in this process dissolves something less of chlorine, partly as HCl and partly as nitrosyl chloride. he course of the regeneration of the nitrogen compounds this phuric acid is decomposed, the chlorine dissolved as HCl is into NOCl and Cl<sub>2</sub>.

gases, along with the pre-existing NOCl, pass into the ng vessel, in the upper part of which is excess of water and on as the gases come into contact therewith, the whole of and the Cl<sub>2</sub> are reverted into nitric and hydrochloric acids,



y the whole of the chlorine dissolved by the nitrous vitriol HCl in the nitric acid regenerating vessel, and its presence tal to the satisfactory progress of this step of the process. ne has therefore to be removed before this stage is reached, one by intercepting the nitrous sulphuric acid in a cast iron ted to 130°C, and passing the evolved gases back into the The acid left still contains some chlorine, however. To this, the regenerating vessel is divided into two parts at the e the greatest amount of HCl has been found to collect, and ally de-chlorinated nitrous-sulphuric acid is passed into the g plant, a volume of weak nitric acid, containing an equal chlorine is drawn off at the point just referred to, and sent the process. There are three drawings, two of which ctively the horizontal and vertical arrangement of the plant.

nts in, and in Apparatus for Use in, or in connection with the tion of Sewage and Impure Waters. F. P. Candy, 29, Higher reet, Eccles, Lancs. Eng. Pat. 166. January 2, 1895.

most exhaustive and comprehensive patent, including as hirty-three distinct claims, which are supplemented by

twenty-nine separate drawings. It is impossible to mention even each claim individually, as the wording of the patent is as brief as possible, considering the magnitude and variety of the claims. In summarising the claims we find the first provides for the aggregation of the suspended matters in sewage prior to the removal of the soluble solids by precipitation. The next five claims refer to alternative ways of achieving this. The other main features are the construction of settling tanks for the treatment of the precipitated sewage, and the aeration of the same with oxygen, products of combustion, etc. Aërating filter beds are also described, along with upward flow filters, and various methods of removing and cleansing the fouled lower portions by mechanical means. The six last claims refer to improvements in the construction of the bottoms of settling tanks, and the details of charging and discharging arrangements.

Improvements in Methods and Apparatus for the Continuous Concentration of Liquids. S. M. Lillie, 328, Chestnut-street, Philadelphia, Pa., U.S.A. Eng. Pat. 2,824. February 8, 1895.

The object is to accomplish the constant and automatic concentration of any liquid *in vacuo*, the flow being continuous, but not at a constant rate. The rate of flow is regulated by the degree of concentration desired, which in turn, by means of suitable valves and mechanism, automatically adjusts the supply. In this way a product in a state of fixed and constant concentration is obtained, in conjunction with all the advantages of an automatic and continuous process. There are five drawings, and three different methods of transferring the regulating action of the density of the concentrated solution, to the valve on the supply pipe are described.

Improvements in Cements, Plasters, Paints, and other Analogous Compositions, and in Apparatus for the Manufacture thereof. R. Stone, 23, St. Dunstan's-buildings, London, E.C. Eng. Pat. 25,356. December 31, 1894.

The chief feature is the prevention of splitting or cracking in cement-made paving blocks, etc., or anything containing lime. It is claimed that this end is attained by adding from 1 cwt. to 5 cwt. of loam and silica to the chalk, marble gypsum or other material employed in preparing the cement, etc. The mixture with this addition is much more durable after it has been burnt in a forced draught kiln, ground, mixed and set. By preference, the loam and silica are added to the limestone or chalk rocks, etc., while in a wet or pulpy state. The particular uses for which the finished product is suitable are, as a mortar, and all the customary applications of cement and plaster, being less liable to contraction, as well as fire and water proof; also, for the preparation of limes, for limelight, and as a pigment for white paint. When forming this cement into paving blocks, etc., the material is compressed into moulds by rollers, whereby the blocks acquire a smooth face, are harder, and wear longer. The kiln in which the frit is prepared is circular, and built of fire brick encased in wrought iron cylinders. The fire bars are of special construction, and bear in radial fashion on the side wall of the kiln and a central brick column, raised sufficiently to give the grate bottom a conical tendency.

Improved Method of Recovering Oils or Fatty Substances from Clays, Sands, Ores, Mine Slimes, or other Finely-divided Substances.—S. Crowder, 63, New Broad-street, London. Eng. Pat. 23,228. November 30th, 1894.

The finely-divided substances to be freed from oil, &c., are mixed with excess of water, and introduced into a round V shaped tank, at the bottom of which air is blown in through a distributing rose. The oil is separated, and rises to the top, where it is brushed off by revolving arms or brushes. A simpler method of removal is to allow the oil to collect at the surface, and then introduce enough water into the tank by a side pipe near the bottom, to cause the oil to flow over the edge into a trough running round the top of the tank on the outside. The apparatus as a whole is specially designed to deal with the recovery of oils from finely-divided substances that have been treated according to patent 427/94. There is one drawing.

CARNALITE AS A SUBSTITUTE FOR KAINIT.—Carnalite has frequently been used as a substitute for kainit in fertilizing meadow land, with good results. It seems that grass can stand an amount of chloride that would be harmful to other plants, and consequently carnalite is not prejudicial as a fertilizer of meadow-land, provided a reasonable quantity is used. The difference in the per centages of chloride in carnalite and kainit has been somewhat unduly exaggerated. The latter contains 48 per cent., and the former 60 per cent. In practical agriculture this difference is not found to constitute such a serious drawback as is generally made out.



## PREPARING BARIUM AND CALCIUM FERRO-CYANIDES WITH ORGANIC BASES.

By P. H. WALKER.

THE methods hitherto proposed for the preparation of ferrocyanides of barium and calcium are based either upon the decomposition of Prussian blue by the hydroxides of barium or calcium, or upon double decomposition of barium or calcium salts on the one hand, and potassium ferrocyanide on the other.

It is very difficult to prepare Prussian blue free of potassium, and the double ferrocyanides of barium or calcium with potassium are formed more readily than the simple salts. Even when the simple salts are formed, if any potassium salt has been used in the preparation, it is almost impossible to remove the whole of the potassium by recrystallization.

After trying various other methods for the preparation of barium ferrocyanide, and having very poor success, I undertook, at the suggestion of Dr. Launcelot Andrews, to prepare it according to the following method:—

This method depends upon the formation of the normal strychnine ferrocyanide, the decomposition of this with ammonia, and the decomposition of the ammonium ferrocyanide by means of barium hydroxide. Strychnine was converted into the acetate by gently heating with water and the calculated amount of acetic acid. This salt, though one of the most soluble salts of strychnine, readily separates in the crystalline form from comparatively dilute solutions when allowed to cool, so it is best to keep it warm. A solution of the calculated amount of potassium ferrocyanide was added to the strychnine acetate, allowed to stand in a warm place, stirred frequently, and the white crystalline strychnine ferrocyanide filtered and washed. After washing, the strychnine ferrocyanide was thoroughly mixed with ammonia water in excess, which decomposed it, forming ammonium ferrocyanide and precipitating strychnine, which was easily separated from the solution of ammonium ferrocyanide, and could be used over again.

The solution of ammonium ferrocyanide, with excess of ammonia, was then boiled with a solution of the calculated amount of barium hydroxide until no more ammonia was given off. The solution was allowed to cool, decanted from the crystals, and the mother liquid further evaporated. The crystals were dried in the air. They were found to contain a very slight amount of barium carbonate. On analysis, they gave 9.43 per cent. of iron and 46.98 per cent. of barium, which corresponds very closely to a salt of the composition represented by the formula  $\text{Ba}_2\text{Fe}(\text{CN})_6 \cdot 6\text{H}_2\text{O}$ , and which is described in Wurtz Dict. de Chim., p. 1090.

The barium ferrocyanide can be easily prepared by this method. The main objections to this method are the bulk of liquid required to dissolve the strychnine salt, and the chance of the formation of barium carbonate during the boiling of the ammonium ferrocyanide solution with barium hydroxide. This last objection can be largely avoided by boiling in a large flask, not with the direct flame, but by passing in a current of live steam. This latter method also has the advantage of inducing the formation of better crystals of barium ferrocyanide.

The following equations represent the reactions:—

- (1)  $\text{C}_{21}\text{H}_{22}\text{N}_2\text{O}_2 + \text{CH}_3\text{COOH} = \text{C}_{21}\text{H}_{22}\text{N}_2\text{O}_2\text{CH}_3\text{COOH}$ .
- (2)  $4\text{C}_{21}\text{H}_{22}\text{N}_2\text{O}_2\text{CH}_3\text{COOH} + \text{K}_4\text{Fe}(\text{CN})_6 = (\text{C}_{21}\text{H}_{22}\text{N}_2\text{O}_2)_4\text{H}_4\text{Fe}(\text{CN})_6 + 4\text{CH}_3\text{COOK}$ .
- (3)  $(\text{C}_{21}\text{H}_{22}\text{N}_2\text{O}_2)_4\text{H}_4\text{Fe}(\text{CN})_6 + 4\text{NH}_3 = 4\text{C}_{21}\text{H}_{22}\text{N}_2\text{O}_2 + (\text{NH}_4)_4\text{Fe}(\text{CN})_6$ .
- (4)  $(\text{NH}_4)_4\text{Fe}(\text{CN})_6 + 2\text{Ba}(\text{OH})_2 = 4\text{NH}_3 + 4\text{H}_2\text{O} + \text{Ba}_2\text{Fe}(\text{CN})_6$ .

Quinoline ferrocyanide was prepared in a similar manner, and this was treated directly with barium hydroxide solution, and the attempt made to get rid of the quinoline by distilling. A large amount of Prussian blue was formed, however, and the mass was thrown away. No other attempt was made using quinoline, as it was then thought that dimethylaniline would answer.

This latter method is the easiest tried, and leaves little to be desired. Dimethylaniline is mixed with water, and hydrochloric acid added in slight excess. This solution then mixed with potassium ferrocyanide solution, the whole filtered and the precipitate washed with the least possible amount of water, then with alcohol, and finally with ether, and dried between pieces of filter-paper. As little water as possible must be used, as the salt is rather soluble.

### ANALYSIS OF THE DIMETHYLANILINE SALT.

Into a beaker was put 0.2220 gram with about one gram pure calcium carbonate, titrated with standard silver nitrate (one c.c. = 5.829 milligrams sodium chloride) using potassium chromate as indicator. Required 18.4 c.c. The end reaction was not very sharp, and after standing over night the red colour disappeared. Then added more of the silver solution, making a total of 19.5 c.c. One c.c. of the above silver nitrate solution would be equivalent to 11.26 milligrams diacid dimethylaniline ferrocyanide. Therefore the 19.5 c.c. would correspond to 0.21957 gram.

Taken, 0.1325 gram mixed with water and two c.c. dilute sulphuric acid added. Then added 17.18 c.c. silver nitrate solution and two c.c. solution of iron alum, titrated back with solution of potassium thiocyanate corresponding to the silver nitrate solution. Required six and one-tenth c.c. Therefore 11.08 c.c. silver nitrate solution used up by salt. In this the end reaction was not sharp.

Taken, 0.1341 gram salt. Treated as above except filtered before titrating back silver nitrate. Sixteen c.c. silver nitrate added, four and one-tenth c.c. potassium thiocyanate required. Therefore 11.9 c.c. silver nitrate solution used, which corresponds to 0.1340 gram of the diacid salt.

Mixed 0.1350 gram with water and titrated with tenth normal sodium hydroxide, using phenolphthalein as indicator.

Required twelve c.c. which corresponds to 1.1351 gram of the diacid salt.

The compound is, therefore, the diacid dimethylaniline ferrocyanide  $[\text{C}_6\text{H}_5\text{N}(\text{CH}_3)_2\text{H}_2\text{Fe}(\text{CN})_6]$ , a white crystalline salt, which is somewhat soluble in water.

### PREPARATION OF BARIUM FERROCYANIDE BY THE DIMETHYLANILINE FERROCYANIDE METHOD.

30.5 grams diacid dimethylaniline ferrocyanide is mixed with barium hydroxide solution containing 22.5 grams barium hydroxide and shaken violently for some time in a flask or separatory funnel. Most of the barium ferrocyanide crystallizes out directly, and can be filtered from the liquid. The dimethylaniline is recovered by shaking the liquid with ether, which also causes more of the barium ferrocyanide to separate.

The crystals of barium ferrocyanide should be well washed, first with a little water and then with alcohol. The following equations express the reactions taking place:

- (1)  $\text{C}_6\text{H}_5\text{N}(\text{CH}_3)_2\text{H}_2 + \text{HCl} = \text{C}_6\text{H}_5\text{N}(\text{CH}_3)_2\text{HCl}$ .
- (2)  $2\text{C}_6\text{H}_5\text{N}(\text{CH}_3)_2\text{HCl} + \text{K}_4\text{Fe}(\text{CN})_6 + 2\text{HCl} = 4\text{KCl} + [\text{C}_6\text{H}_5\text{N}(\text{CH}_3)_2\text{H}_2]_2\text{Fe}(\text{CN})_6$ .
- (3)  $[\text{C}_6\text{H}_5\text{N}(\text{CH}_3)_2\text{H}_2]_2\text{Fe}(\text{CN})_6 + 2\text{Ba}(\text{OH})_2 = 2\text{C}_6\text{H}_5\text{N}(\text{CH}_3)_2 + 4\text{H}_2\text{O} + \text{Ba}_2\text{Fe}(\text{CN})_6$ .

Barium ferrocyanide  $[\text{Ba}_2\text{Fe}(\text{CN})_6 \cdot 6\text{H}_2\text{O}]$  crystallizes in oblique rectangular prisms belonging to the monoclinic system. The crystals are unaltered in the air at ordinary temperature, lose eleven-twelfths of their water at 40°C., the rest of the water is not driven off until the salt begins to decompose. The solubility varies from one in 584 parts cold water to one in 116 parts boiling water. Dammer gives the solubility as varying from one in 1,000 parts water at 15° to one in 100 at 75°.

### SOLUBILITY OF BARIUM FERROCYANIDE.

Some solubility determinations were made on the salt prepared as above. The apparatus used was, I believe, devised by Dr. Launcelot Andrews. The apparatus consists of two Woulff bottles, A and B. A has three necks. The middle neck contains a perforated stopper holding a thermometer, the bulb of which goes nearly to the bottom of the bottle. The left hand neck has a stopper carrying a short glass tube which can be connected with the suction pump. The right hand neck has a stopper with a tube passing through, and reaching to the bottom of the bottle; in fact, it is better to have the tube touching the bottom. This tube is connected to a tube passing through one of the necks of B, the other neck of B has a tube passing nearly to the bottom of the bottle. Water is put in the two Woulff bottles, and in A a larger amount of the salt to be tested than can be dissolved by the water. The whole apparatus is then put in a vessel of water, and air drawn through for several hours. The water in B preventing any evaporation from A. The current of air is then stopped long enough to allow the undissolved portion to settle. A measured amount of the clear liquid taken out, noting the temperature, evaporated and residue weighed.

|      | Amount solution. | Temperature. | Residue. Grams. | Parts water. |
|------|------------------|--------------|-----------------|--------------|
| I.   | 5 c.c.           | 18°C.        | 0.0194          | 257.7        |
| II.  | 5 c.c.           | 18°C.        | 0.0198          | 252.5        |
| III. | 30 c.c.          | 18°C.        | 0.1190          | 252.1        |
| IV.  | 25 c.c.          | 17°C.        | 0.0936          | 267.0        |
| V.   | 25 c.c.          | 19°C.        | 0.0930          | 268.8        |
| VI.  | 25 c.c.          | 16°C.        | 0.0924          | 270.5        |

These results fall within the limits as given by Wurtz.

### PREPARATION OF CALCIUM FERROCYANIDE.

Twenty-three grams of diacid dimethylaniline ferrocyanide mixed with water and milk of lime prepared from six grams pure lime. The mixture shaken violently in a flask, allowed to stand some time, filtered, shaken with ether to separate the dimethylaniline, separated from ethereal solution with separatory funnel, evaporated down in flask, carbon dioxide passed through, again boiled, filtered, and evaporated to about 50 c.c. Alcohol then added, which causes crystals to separate. Then crystals dried between filter paper. The crystals



are of a pale yellow colour, and are very soluble in water. When a saturated solution is allowed to stand for a long time at the temperature of the laboratory, large flat crystals are deposited.

#### NOTE ON THE SEPARATION OF IRON AND ALUMINUM.

Since strychnine ferrocyanide is almost insoluble, and is easily filtered, it may possibly be used to separate iron and aluminum in the following manner.—

The solution containing ferric and aluminum salts is treated with excess of strychnine ferro-cyanide. The Prussian blue thus formed can be filtered with ordinary filter-paper, and the aluminum precipitated by ammonia from the filtrate. By this method I have easily gotten perfectly white aluminum oxide; but have not as yet gotten the conditions for a complete quantitative separation.

I wish in conclusion to express my thanks to Dr. Launcelot Andrews, who, by his advice and assistance, rendered this work possible.

### CITY AND GUILDS OF LONDON INSTITUTE.

THE annual distribution of prizes and certificates to students of the colleges and schools connected with the City and Guilds of London Institute for the advancement of technical education took place last week at Merchant Taylors' Hall, Threadneedle-st., E.C. In addition to the Lord Mayor, who occupied the chair, there were present Sir Edward Clarke, Q.C., M.P., Alderman Sir Stuart Knill, Sir Frederick Abel, Alderman Vaughan Morgan, Sir Owen Roberts, Sir Philip Magnus, Sir Walter Prideaux, Professor Silvanus Thompson, Professor W. C. Unwin, Prebendary Whittington, Dr. Garnett, Mr. Beckwith (treasurer), the Master of the Merchant Taylors' Company, the Master of the Salters' Company, Mr. E. Nash, Mr. Rokeby Price, and Mr. Bousfield. The report, which was read by the hon. secretary (Mr. John Watney), stated that the object with which the institute was founded nearly 20 years ago was to benefit the productive industries of this country by promoting and encouraging the application of science and art to industrial purposes. Two-thirds of the funds required for carrying on the work was contributed by the Corporation and the principal Livery companies of the City. Sir Edward Clarke distributed the numerous prizes, and expressed the opinion that a great deal of money was being annually wasted in this country on technical education. The City companies had fortunately not made the mistake of attempting to deal with manual dexterity. But the more the introduction of machinery and of science tended to reduce the work of the ordinary labourer to a mere mechanical performance, the greater necessity there was that there should be the highest skill in the direction of that labour. It was satisfactory, therefore, to find that that was the work which the institute had set itself to accomplish. Sir Frederick Abel and Mr. Beckwith having addressed the meeting, the proceedings terminated with a vote of thanks to Sir E. Clarke and the Lord Mayor.

### ELECTROLYTIC ESTIMATION OF MERCURY IN CINNABAR.

IN a paper recently read before the American Chemical Society, Messrs. W. B. Rising and V. Lenher describe a method of determining mercury in cinnabar by electrolysis. When rapid solution of cinnabar is desired, heretofore, oxidation with aqua regia has seemed most convenient; the length of time required to expel the nitric acid used, and the likelihood of loss of mercury by distillation in hydrochloric acid, are serious hindrances to the use of this method. Hydrobromic acid dissolves very readily mercuric sulphide, as well as many other naturally occurring sulphides with the evolution of hydrogen sulphide and the formation of the bromide.

If this solution be nearly neutralized with caustic potash, pure potassium cyanide added in sufficient excess to dissolve the cyanide first precipitated (Smith, Electro-Chemical Analysis, p. 58, and C.T.J., Nos. 171 and 203), and electrolyzed with a weak current, the mercury will be readily deposited as metal on a platinum dish used as a negative electrode. The use of hydrobromic acid is to be recommended, as it gives such a ready method of decomposition, and can be used at low temperatures, when there will be no loss of mercury by distillation.

The hydrobromic acid used in the following experiments was prepared by treating potassium bromide with sulphuric acid of 56° Baumé; the gas was conducted into water, as in the preparation of hydrochloric acid. By using potassium bromide with the above strength of acid, hydrobromic acid quite free from bromine, can be readily prepared.

The ordinary hydrobromic acid used in the laboratory, containing bromine, could be used in the following experiments:

The first sample which was worked with was pure mercuric sulphide. Hydrobromic acid of constant boiling point, i.e., forty-nine per cent. was diluted with water one to four, and the sample treated with as little excess as possible over what would be necessary for its solution;

the slight excess of acid was neutralised with potassium hydroxide potassium cyanide added in excess and the solution electrolyzed by a current giving 0.025 ampere N.D. 100.

The following results were obtained:

| Mercuric sulphide.<br>gram. | Mercury found.<br>gram. | Mercury.<br>Per cent. |
|-----------------------------|-------------------------|-----------------------|
| 0.2110                      | 0.1818                  | 86.16                 |
| 0.2058                      | 0.1774                  | 86.20                 |

The second sample was a naturally occurring cinnabar; determination (a) was made, using the decomposition by aqua regia, evaporating off the excess of nitric acid with hydrochloric, neutralizing the excess of hydrochloric acid with potassium hydroxide, adding potassium cyanide in excess and electrolyzing as before. (b) and (c) were treated with 20 per cent. hydrobromic acid at the boiling temperature; solution was effected in a few minutes, the excess of acid was neutralized by potassium hydroxide, potassium cyanide added in excess and electrolyzed with the same strength of current as before.

Results were:

|          | Cinnabar.<br>gram. | Mercury found.<br>gram. | Mercury.<br>per cent. |
|----------|--------------------|-------------------------|-----------------------|
| (a)..... | 0.2024             | 0.1046                  | 51.68                 |
| (b)..... | 0.2514             | 0.1299                  | 51.67                 |
| (c)..... | 0.5135             | 0.2656                  | 51.72                 |

The last sample was a lower grade cinnabar, very silicious, and long digestion with either hydrobromic acid or aqua regia was necessary. In this last experiment the action of the hydrobromic acid was very much more rapid than that with aqua regia. The mercury was deposited from a cyanide solution as before.

Results were, using hydrobromic acid as solvent:

|          | Cinnabar.<br>gram. | Mercury found.<br>gram. |
|----------|--------------------|-------------------------|
| (a)..... | 0.2011             | 0.0616                  |
| (b)..... | 0.2011             | 0.0622                  |

Using aqua regia as solvent:

|          | gram.  | gram.  |
|----------|--------|--------|
| (a)..... | 0.2030 | 0.0629 |
| (b)..... | 0.2030 | 0.0631 |

### EXPORTS OF PETROLEUM FROM U.S.A.

THE Chief of the Bureau of Statistics, Washington, gives the following returns of the exports of petroleum and petroleum products for November, 1895. The total shipments were 75,150,487 gallons, compared with 76,955,316 gallons in 1894. The total for the eleven months ending November, 1895, was 772,540,884 gallons, against 811,801,939 gallons during the same period in 1894. The details of the shipments are as follow:—

| CRUDE PETROLEUM.            |  | Gallons.   |
|-----------------------------|--|------------|
| Total, November, 1895 ..... |  | 10,706,080 |
| " " 1894 .....              |  | 11,925,791 |
| NAPHTHAS.                   |  |            |
| Total, November, 1895 ..... |  | 1,533,344  |
| " " 1894 .....              |  | 2,231,689  |
| ILLUMINATING.               |  |            |
| Total, November, 1895 ..... |  | 58,548,852 |
| " " 1894 .....              |  | 59,370,836 |
| LUBRICATING AND PARAFFIN.   |  |            |
| Total, November, 1895 ..... |  | 4,364,001  |
| " " 1894 .....              |  | 3,426,572  |
| RESIDUUM.                   |  |            |
| Total, November, 1895 ..... |  | 210        |
| " " 1894 .....              |  | 1,428      |

**FIRE AT AN OIL GAS WORKS.**—A serious fire broke out last week at the oil gas works of the London, Brighton, and South Coast Railway, Cold Blow-lane, New-cross. It originated in a railway arch, used as a store, which contained some 4,000 gallons of oil, and spread so rapidly that the firemen, with six steamers, were unable to prevent very serious damage. The Chief Officer of the Fire Brigade in his official report thus records the damage:—"Two railway arches, each about 30 ft. by 25 ft., one containing about 4,000 gallons of oil, the other about 5,000 gallons of tar, a gasometer, about 12 ft. in diameter, burnt out, and a quantity of stock in yard severely damaged by fire, three arches, each of two floors, about 30 ft. by 25 ft. (used as stores), and a building of one floor, about 90 ft. by 30 ft. (used as manufactory), and the contents damaged by fire and water, and about 70 ft. of wooden fencing damaged by fire and cutting away (all adjoining and communicating). William Hopkins, aged 27 years, burned on the hands, arms, and face, and taken to a hospital."



## THE CHEMICAL SOCIETY.

A SPECIAL meeting of the Chemical Society was held at Burlington House last week, when Professor G. F. Fitzgerald, F.R.S., of Trinity College, Dublin, delivered a memorial lecture on the life and work of the late Professor Von Helmholtz. There was a large audience, including Sir Joseph Lister, Lord Rayleigh, Sir Henry Roscoe, Professor Armstrong, Dr. Frankland, Professor Ramsay, Professor Roberts-Austen, and others. The lecture dealt mainly with very abstruse questions of the physical constitution of matter, viewed in relation to theories enunciated by Helmholtz. The lecturer mentioned that the children of his intellect valued most by Helmholtz himself were not the ophthalmoscope, nor his physiological theories of sight and hearing, nor his chemical and electrical theories, but his mathematical theories of fluid and vortex motion (*vide C.T.J.* 400, p. 43). Remarking that to the Chemical Society the bearing of Helmholtz's work in this direction on chemical action would be most interesting, Professor Fitzgerald proceeded to show some of the difficulties inherent in Lord Kelvin's suggestion, based on Helmholtz's theories, that atoms are vortices in a perfect fluid, and went on to consider some of the applications of thermodynamics to chemical theory as worked out by Helmholtz. Passing to the discussion of some of the problems of capillarity, solution, and electrolysis, he concluded by saying that Helmholtz, by his physiological, chemical, and physical researches, had brought us measurably nearer to an ultimate dynamical explanation of the universe.—In proposing a vote of thanks Sir Joseph Lister, President of the Royal Society, said he recollected with pride that Helmholtz was a medical practitioner. That from being such he should have become a brilliant physicist was a very remarkable fact. He would have done enough to claim the gratitude of physicians and surgeons if he had done nothing else than explain the accommodative power of the eye to varying distances and invent the ophthalmoscope.—Dr. Frankland seconded the resolution, and among the subsequent speakers were Lord Rayleigh, Sir Henry Roscoe, Professor Armstrong, and Professor Poynting.—In adjourning the meeting the President (Mr. A. G. Vernon Harcourt) mentioned that Helmholtz was half an Englishman, seeing that his mother was a Miss Penn, who was connected with the family of the founder of Pennsylvania.

## AMERICAN PRODUCTION OF MANGANESE IN 1894.

ACCORDING to the latest report of the United States geological survey, which has been compiled by Mr. Jos. D. Weeks, the production of manganese ores proper in the United States in 1894 shows a reduction from the previous year, the product being 6,308 tons in 1894, as compared with 7,718 tons in 1893. The production of 1894 is the smallest of any year since 1884. The production of Arkansas in 1894 was about the same as in 1893; California shows a reduction of 122 tons, Virginia a reduction of about 2,300 tons, while Georgia shows an increase of 553 tons, Tennessee an increase of 440 tons, and West Virginia, which does not appear at all in previous years, shows a production of 100 tons.

The total value of the 6,308 tons produced in 1894 was £10,727, or about 35s. 6d. a ton, as compared with a total value in 1893 of £13,332, and an average value of about 36s.

The amount and value of the manganese ore produced in the United States in 1893 and 1894 is shown in the following table:—

Amount and Value of Manganese Ores Produced in the United States in 1893 and 1894.

| States.           | 1893.                  |                 |                   | 1894.                  |                 |                   |
|-------------------|------------------------|-----------------|-------------------|------------------------|-----------------|-------------------|
|                   | Product.<br>Long tons. | Total<br>value. | Value<br>per ton. | Product.<br>Long tons. | Total<br>value. | Value<br>per ton. |
| Arkansas .....    | 2,020                  | \$24,240        | \$12 00           | 1,934                  | \$19,564        | \$10 13           |
| California .....  | 400                    | 2,000           | 5 00              | 278                    | 1,800           | 6 47              |
| Georgia .....     | 724                    | 5,068           | 7 00              | 1,277                  | 8,620           | 6 74              |
| Tennessee .....   | 482                    | 4,504           | 9 34              | 922                    | 6,993           | 6 50              |
| Virginia .....    | 4,092                  | 30,802          | 7 53              | 1,797                  | 16,658          | 9 27              |
| W. Virginia ..... | —                      | —               | —                 | 100                    | 1,000           | 10 00             |
| Total....         | 7,718                  | 66,614          | a8.63             | 6,308                  | 53,635          | a8.50             |

a Average.

A comparison of this table with that of previous years shows the uncertainty accompanying the production of manganese ores. To go back only to 1891: In this year eight States were producers of manganese, the total production being 23,416 tons. In 1892 but three States produced, but still the total was 13,613 tons. In 1893 five States produced manganese, but the total production fell to 7,718 tons; and though in 1894 six States produced manganese, the total production had fallen off, as compared with 1893, 1,410 tons, and as compared with 1891, 17,108 tons.

A comparison of the production of the different States in 1891 with 1894 will show this change even in a more marked degree. In 1891 Virginia produced 16,248 tons; in 1894 only about one-ninth of that amount; that is, 1,797 tons. In 1891 Georgia produced 3,575 tons; in 1894 but 1,277 tons, a little more than one-third. In 1892 Arkansas produced 6,708 tons; in 1894 but 1,934 tons, less than one-third.

The decrease in production of manganese occurs chiefly from the apparent exhaustion of the Crimora deposit in Virginia and to the exhaustion of the pockets that have been worked in Georgia and Arkansas. The depression in the steel industry and the low prices at which manganese ruled for a while discouraged further search and development. It is by no means certain or even probable that the manganese deposits in Virginia, Cattersville, and Batesville districts are exhausted. New pockets will undoubtedly be found in all three districts, but we may always look for great fluctuation in the production of manganese in the different States.

There will also be a fluctuation in the value of the ores mined, due not only to changes in price growing out of supply and demand, but also out of the increased or decreased richness of the ore. As a rule the ore mined at the beginning and close of working a pocket is somewhat leaner than that produced when the pocket is yielding large returns of ore; that is, around the edges of the pocket the ore is apt to be leaner than in the centre.

## PETROLEUM REFINING IN HUNGARY.

THE mineral oil refinery at Oravicza, South Hungary, has been handling none but Caucasian oil since 1886. In the first of the two principal buildings, consisting of central hall and two side halls running parallel to each other, 18 distilling vats are placed in groups of four and six. Their capacity, including the condensing apparatus, is two tons each. The fireplaces are in the central hall, while the coolers are located in the side halls, which are separated from the former by partition walls. The products of distillation are led in conduit pipes from the condensers to a side room of the second main building. Here are the departments for refining, filtering of heavy mineral oils, and for the manufacture of lubricating oil and axle grease. An engine of 16 horse-power, two air compressors and four pumps are fitted up in two side rooms. In another building the distilled product is refined; it contains 15 tanks of a capacity of 3.3 tons each. In the refining department of the second main building there are four mixing apparatus of 4.5 tons and 20 smaller ones of 1.5 to 2 tons capacity each. These serve for the treatment of the oils with sulphuric acid, lye, and water. Besides, there are separate tanks and pumps, and departments for filtering the heavy mineral oils and production of the different lubricating oils. The 11 pumps in the refining department are connected with an extensive system of pipes and effect the movement of the crude, half-finished and finished material.

By distillation the crude oil is separated according to its specific gravity, into petroleum 0.820—0.825 specific gravity, burning oil of 0.885 specific gravity, and mineral grease of 0.900—0.906 specific gravity.

The refining of the distilled product is accomplished by treating it with sulphuric acid of 66° B., then with a solution of soda, and, finally, by washing it with water. The factory handles annually 3,500 to 4,000 tons crude oil and produces therefrom 2,800 to 3,200 tons of petroleum of 0.825 specific gravity and 500 to 600 tons of heavy mineral oils of from 0.885 to 0.906 specific gravity. Of by-products there are produced annually: 120 tons of machine oil, 100 tons of solid greases, and 600 tons of other different products. The works require annually: 1,000 tons of coal, 130 tons of sulphuric acid, 8 tons soda-ash and 8 tons quicklime.

CHANGE OF ADDRESS.—We are informed by the Southgate Engineering Co., Ltd., that this company has removed its London office from 170, Fenchurch-street to Leadenhall House, Leadenhall-street, E.C. This office will be under the management of Mr. J. Reid.

A DECAYING BRITISH INDUSTRY.—The competition which is at the present time so actively felt in the iron ore trade in consequence of the very large importation of Spanish and other foreign ores into this country is having a serious effect on the native hematite iron ore trade of the north-west of England. Lately, even in this district, Spanish ores have been largely imported to compete with the native products, and some of the firms in Furness and Cumberland are now using 20 to 25 per cent. of foreign ore, although native hematite mines surround their blast furnaces. Spanish ores are quoted at 12s. per ton delivered at West coast ports, and the quality of the metal is higher than that of home produce. It is felt that the only means by which raisers of iron ore in this country can successfully compete against foreign ore will be reduced railway charges and reduced royalties.



## Correspondence.

\* \* We do not hold ourselves responsible for the opinions expressed by our correspondents.

### THE RAPID ESTIMATION OF INSOLUBLE PHOSPHATES.

(To the Editor of the Chemical Trade Journal.)

SIR,—As one having made a speciality of manure analyses, I am somewhat surprised to read Mr. Vincent Edwards' suggestion as to the use of the Volumetric Uranium method in rapid tests for "insoluble phosphates."

I have used the method in past years in many hundreds of analyses of manures, and from lengthened observation found the conditions requisite for securing the most accurate results to be the very reverse of those now described by Mr. Edwards, viz., "That a diluted titration led more frequently to too high figures being obtained, the Uranium precipitate not being of constant composition."

I cannot agree with Mr. Edwards' assumption of iron and alumina phosphates being included in his results, that is to say, without previous precipitation by magnesia, after Joulie, and as a rapid and accurate estimation by weight can now be effected in a reasonable time I see no advantage in Mr. Edwards' views on the question of rapidity; on the contrary, if too high figures should be given by the uranium method under the conditions he describes, manufacturers would be placed at a disadvantage, their figures becoming contradicted in the buyer's hands. To have perfect phosphate determinations is of the utmost importance to makers of manure, as many cases of dissatisfaction arise from faulty tests, too high figures being given (frequently so) as regards soluble phosphate.—Yours, &c.,

ALFRED FIRBY.

Analytical Laboratory, 10, Infirmary-street, Leeds.

### THE PRICES OF CRUDE NAPHTHA AND BENZOL.

(To the Editor of The Chemical Trade Journal.)

SIR,—I should like to again draw attention to the extraordinary fact of the illogical discrepancy between the present prices of 30% crude naphtha and 90's benzol.

A short time ago 30% crude naphtha was quoted at about 5d. and 90's benzol at 11d., thus giving a margin of, say, 6d., including cost of manufacture and distiller's profit.

At present with 90's benzol at, say, 2s. 4d., and crude naphtha at, say, 10d., the margin is 1s. 6d., i.e., three times as large as before for almost exactly the same work.

Assuming, for argument's sake, that this previous margin of 6d. was half for cost of manufacture and half for profit, the position of things would be that, the cost of manufacturing remaining approximately the same, the profit is increased as 3d. is to 1s. 3d., i.e., the present profit of the benzol distiller is about five times as large as before the rise.

The matter is so totally inexplicable to me that one would think the present high prices of benzol must be due to some artificial handling, for if there were any prospect of this or similar prices being maintained, or of a further rise, surely makers of 90's benzol would long ago have been glad and ready to pay a higher price than 10d. for crude naphtha.—Yours truly,

HENRY SIMON.

Manchester, January 30, 1896.

### ANSWERS TO CORRESPONDENTS.

TEMPUS.—It will not be before Whitsuntide. We have not lost sight of the matter, and shall be well prepared as soon as the time for action arrives.

SUBSCRIBER.—The best we can do with regard to your query about coal-tar naphtha is to refer you to Lunge's work on the subject, which will tell you all there is to be told.

H. K. P.—It is too high. We have had several far better offers.

N. C.—It will be a regular feature. We thank you for your complimentary criticism.

M. D. AND J. W.—We are glad you were pleased.

## Trade Notes.

CHEMICALS *via* THE SHIP CANAL.—During the past week the following cargoes of interest to the chemical trade have been imported:—Seventeen cargoes of stone and slate, thirteen of pottery material, eight of pig iron, one of resin, and one of logwood. There were also shipments of bauxite and Esparto grass from Marseilles and Almeria respectively. The exports included two cargoes of purple ore, one of pitch, and one of salt. Among the steamers fixed for Manchester there is the *Cato*, 701 tons, and *Napoli*, 852 tons, with wood pulp, from Drontheim and Christiania; *Newcastle*, 833 tons, *Dunstaffnage*, 874 tons, and *W. Harkess*, 736 tons, with timber and pulp, from Gothenburg, &c., and *Hollinside*, 692 tons, and *Cymbeline*, 880 tons, with timber, pulp, &c., from Hango.

COMBINATION OF THE FRENCH SLAG PRODUCERS.—We learn that a combination of the French producers of Basic slag has been all but concluded. The main objects of the combine will be the maintenance of prices at a remunerative level, the protection of the trade against foreign competition and the repression of the fraudulent adulterations, which it appears are being practised on an extensive scale. The combine will adopt a special trade mark, and will have central offices and sale rooms in Paris.

INSTITUTE OF CHEMISTRY EXAMINATIONS.—At the examination for admission to the membership of the institute, held from January 7th to 10th, the following candidates were successful:—G. H. Appleyard, Yorkshire College, Leeds; J. H. Coste, Finsbury Technical College; G. George, Merchant Venturers' Technical College, Bristol; F. Hudson-Cox, School of the Pharmaceutical Society, and University College, London; P. C. H. Hunt, Mason College, Birmingham; and E. J. Parry, B.Sc. (London), Guy's Hospital. Of the candidates for the intermediate examination, the following satisfied the examiners:—P. G. Jackson, University College, Nottingham; E. J. Reade, B.A. (Cantab); and H. S. Shrewsbury, University College, Nottingham. The examiners were Professor W. R. Dunstan and Mr. Otto Hehner. The members of the institute now number over 900, and there are over 200 registered students.

## Market Reports.

### TAR AND AMMONIA PRODUCTS.

Benzols are a shade easier, with 50/90's at 1s. 10½d. and 90's at 2s. 2d. Carbolic acids are very firm at advanced prices, 60% crude now being quoted at 1s. 10½d. to 1s. 11d. and 40% crystals 7d. Crude naphtha and solvent remain as last quoted, and creosote and anthracene are also unaltered. Pitch quiet at 36s., f.o.b., East Coast.

Sulphate of ammonia is firmer, and prices rather better in comparison with the exceptionally low values that have been current during the past week. Beekton quotation is now £8. 10s., and the same price stands good for the other ports. Forward is quiet, buyers being scarce, and shy owing to the firmer tone of the last day or two.

### LIVERPOOL MINERAL MARKET.

There has been very little change in our market this week, and the good tendency continues. Manganese: The arrivals have been very small; what little has arrived has been against forward purchases, and goes straight into consumption, whilst stocks are further reduced; prices are, therefore, very firm. The higher percentages for chemical works are very scarce. Ground manganese: Prices continue very strong at £6., £8., £10., and £12. 10s. per ton, according to quality. Manganiferous iron ore continues without alteration at 16s. to 17s. 6d. per ton, c.i.f. Chrome ore: The arrivals have been only very small this week; the demand keeps good at 70s. to 100s. and 105s. per ton, according to quality. Bauxite: Sales have been at good figures, and prices remain firm at 20s. per ton for first, 16s. per ton for second, and 12s. per ton for third quality, f.o.b., in cargoes. French chalk: The arrivals have continued but slow, and the consumption is larger than the supply; in consequence the prices are very strong for "Angel White" brands at 70s. to 75s., 80s. to 90s., and 100s. to 110s. per ton, according to grade. Wolfram and scheelite: There has been a continued demand for these ores, and as the spot stock of high qualities is exceptionally small, prices are very strong. Arsenic continues very scarce at £17. to £19. per ton. Fuller's earth: The demand continues fair, and the prices for "Emerald" and other brands continue steady at 50s. for lump, 55s. to 75s. for powdered. Rottenstone: Prime quality is scarce, and brings good prices; sales are being made at £8. 10s. to £15. per ton, according to grade. The market for ochres and umbers remains steady; there is a steady demand for J.C. ochre, which is being done at 60s. to 65s. per ton, and prime umber is in fair demand at 40s. to 45s. per ton. Carbonate and sulphate of barytes continue practically without alteration; the demand is rather quiet, but prices are firm. Feldspars and fluorspars are unchanged, a fair business being done. Emery stone is in rather better request at full prices. Plumbago: The demand for foundry and lubricating purposes is very good, at £6. to £10. per ton. Ceylon qualities are in good demand at £15. to £20. per ton. Pumice stone: The finer grades of lump and powdered are in good demand, and bring good prices. Iron ore is quiet, and without change, at about 10s. per ton. Bog ore is in better demand; good quality bringing 25s. to 25s. per ton, according to quantity. Lead ore: With the better prices ruling for this article the price for potters' qualities has advanced accordingly, and is now firm at £12. to £14. per ton for good selected quality.



## REPORT ON MANURE MATERIAL.

The market for phosphates continues to drag, but for nitrogenous material the tone has somewhat improved in sympathy with nitrate of soda. It is early to form any reliable opinion as to the coming manure season, but so far as can at present be seen, the prospects appear encouraging. A spell of severe weather might, however, seriously alter the outlook, and it is not too late for such a contingency. Meantime, although manure makers are pretty well satisfied that present level of prices is favourable for further purchasing, they seem disposed to wait events some time longer. Quotations for mineral phosphates are unchanged, and in the absence of important business, quotations must be taken as nearest market values. There has been more doing in River Plate bones, but prices accepted do not transpire. Nearest value is probably £3. 15s. per ton, though for handy cargoes something more might have to be paid. Crushed Kurrahee bones on spot may be had at £3. 18s. 9d. per ton, but for shipment £4. is required. Bombay bone meal continues to offer freely for shipment, at £3. 15s. to £3. 16s. 3d. per ton, according to position, for ordinary quality, and on spot at £3. 16s. 3d. to £4. per ton, according to quality. Common grinding bones are worth £3. 10s. to £3. 15s. per ton, according to quality and condition. Owing to the reported agreement of producers of nitrate of soda to reduce output, the market is firmer in all positions, but the large visible supply for the coming season prevents any very substantial advance. On spot, the quotation is 7s. 9d. to 7s. 10½d. per cwt., according to quality. Due cargoes at the close are worth about 7s. 9d. per cwt., ordinary quality. Home prepared dried blood, fine quality, may still be had at 7s. 6d. per unit of ammonia, though sellers seem disposed to hold for more money.

## MISCELLANEOUS CHEMICAL MARKET.

Business in the alkali trade is fairly active, both for export and home account. The price of alkalis all round is steadily maintained. There are no changes in quotations either for caustic soda, ammonia alkali, or Leblanc soda ash. Caustic soda quotations on the spot are as follows:—F.o.b. Liverpool, 77%, £9. 7s. 6d.; 74%, £8. 10s.; 70%, £7. 10s.; 60%, £6. 10s. nett per ton, 10-ton lots and upwards. Soda crystals unchanged at 35s., bags, makers' works. Bleaching powder is in steady and good demand at £7., makers' works, and £6. 15s. to £7. 5s. per ton, hardwoods, f.o.b., according to market. Saltcake firm and in strong request at 25s. to 27s. 6d., f.o.r. Sulphur £3. 12s. 6d. per ton. Chlorate of potash 3¼d. per lb.; soda 6½d., but there are some small resales at fractions below these quotations. For white powdered arsenic price has further advanced, owing to the continued scarcity—£17. to £17. 10s. being paid for odd lots. Sulphate of copper firmer at £15. 15s., f.o.b. Tartaric acid advanced to 1s. 2½d. per lb. Acetate of lime, brown, still overstocked, and price depressed accordingly—quotations, £4. 15s. to £5., c.i.f.; grey acetate of lime £7. 15s. nett, c.i.f.; brown sugar of lead scarce at £15. 10s., c.i.f. White sugar of lead flat and without change in price. Acetic acid selling freely, and price steady. Acetate of soda in fair request at £14. to £14. 5s., c.i.f. Potash, caustic and carbonate, meet with good inquiry, and prices are firm. Yellow prussiate of potash 7¼d. to 8d. Sulphocyanides quiet, and prices unchanged. Cyanide of potassium is a turn easier at 1s. 3d. per lb. Muriate of ammonia is in fair request, and price firm at £23. per ton. Other ammonia salts steady. Carbolic acid crystals have improved in value, and there is a strong demand. Reports generally do not indicate any marked improvement in the general trade.

## THE METAL MARKETS.

LONDON, WEDNESDAY.—Pig iron, firm: Scotch warrants closed at 46s. 7d.; Middlesbrough, 37s. 8d. cash, and hematite, 47s. 9d. Copper, easier: Chili bars, G. O. B.'s and G. M. B.'s closed at £43. 2s. 6d. to £43. 7s. 6d. cash, and £43. 10s. to £43. 15s. three months. Tin, easy: Straits closed at £60. 5s. to £60. 15s. cash, and £61. to £61. 10s. three months. Australian, £61. English ingots, £64. Lead, firm: Spanish, £11. 3s. 9d. to £11. 5s. English, £11. 7s. 6d.; Silesian spelter, ordinary, £14. 7s. 6d. Nickel, 1s. 2½d. Antimony, £30. Quicksilver: first hands, £7. 7s. 6d.; second hands, £7. 4s. Copper shares, quiet: Cape, 2½ to 2½; Copiapo, 2 to 2¼; Libiola, 2½ to 2½; Mason and Barry, 2½ to 2¼; Rio Tinto, 17½ to 17½; Tharsis, 4¼ to 5.

GLASGOW, WEDNESDAY.—Market easier, with good business. Scotch done at 46s. 7½d. and 46s. 7d. cash, also at 46s. 9½d., 46s. 9d., and 46s. 9½d. one month; closing with buyers at 46s. 7d. cash, sellers ask 46s. 7½d. Cleveland done at 37s. 11d. one month; closing with buyers at 37s. 8d. cash, sellers ask 37s. 8½d. Cumberland hematite done at 47s. 11d. cash, also at 48s. 1½d. and 48s. one month; closing with buyers at 47s. 9d. cash, sellers ask 47s. 9½d. Middlesbrough hematite closes with buyers at 45s. 8½d. cash, sellers ask 45s. 9½d.

## LIVERPOOL OIL AND COLOUR MARKET.

WEDNESDAY.

OILS.—Palm oil is steady, but there is not very much doing. Chief business has been in hard oils at £18. 10s. transit for February-March. There is no alteration in the price of olive, but there has been a limited business doing. Linseed is firmer, Liverpool makes now being held for 20s. 9d. to 21s. per cwt., in export casks. Cottonseed has fallen, and is quiet even at the reduction. Liverpool refined is now quoted 17s. 6d. to 17s. 9d. per cwt. There is a good market for good seconds. Castor oil is a fraction easier, closing steady at 2½d. First pressure French 2½d. per lb., but inclined to fall. There is nothing fresh to report concerning tallow. Resin is steady. Common continues in good demand at full prices, but the finer grades are neglected. Spirits have been moving fairly well, last week's price of 21s. 6d. per cwt. still being current. Petroleum quiet; prices both for American and Russian being purely nominal, at about quotations last given.

COLOURS are steady, without alteration in prices. Ochres: Oxfordshire, common, £10., medium, £12., best, £15. Derbyshire, common, 40s.; medium, 50s., best, 60s.; Welsh, best, 90s., seconds, 50s., and common, 18s.; Irish, Devonshire, 40s. to 45s.; French, J.C., 60s. to 65s.; M.C., 65s. to 67s. 6d. Umber: Turkish quiet; Devonshire, 50s. to 55s. White lead, £16. Red lead unchanged. Venetian red, £6. to £10. Cobalt: Prepared oxide, 9s. 9d.; black, 9s.; blue, 6s. Zaffres: No. 1, 3s. 6d.; No. 2, 2s. 6d. Oxide of iron: Common, £7.; medium, £10.; finest, £20. Zinc oxide, £22. 10s. to £25.

## HULL PAINT, OIL, AND COLOUR REPORT.

TUESDAY.

OILS.—Business continues good, and the momentary difficulty appears to be getting delivery of goods after having bought. The import of linseed during the week has been 7,230 quarters, and with the prospect of small supplies for the next few weeks, linseed has experienced a smart advance in price. The import for the year has been 53,776 quarters, as against 17,867 quarters a year ago. Linseed oil has advanced in price about 10s. per ton, closing steady on spot at 19s. 4½d. naked; February-April or May-August worth 19s. 1½d., and September-December 18s. 9d.; boiled and refined from £1. to £2. per ton extra. Export for the week has been 2,240 cwt. During the week the import of cottonseed has been 4,882 tons from Alexandria, making a total for the year of 22,021 tons, against a year ago 19,355 tons. Refined cotton oil about 10s. per ton higher, the closing quotation on the spot being 15s. 7½d. naked; February-April, 15s. 9d.; and May-August, 16s. 3d. to 16s. 7½d. per cwt. Crude worth 14s. 1½d. Casks, £1. and ordinary barrels 30s. per ton extra. The export for the week has been 6,560 cwt. Spirits of turpentine, 22s. 3d. per cwt. Castor oil steady. Olive oil unchanged. Cod oil from £16. to £19. per ton. Sperm oil from 23s. Neutral liquid soap, £15. per ton. Mineral oil, very limited supply. Sweet fat, £26. 10s. per ton. Locomotive grease, £12. per ton.

CAKES.—Linseed cakes dearer, in sympathy with seed: 95% pure, £6. 7s. 6d. to £6. 10s. Oil cakes, £5. 5s.; Russians, £5. 17s. to £6. per ton. Cotton cakes are also dearer: best makes, £3. 15s.; seconds, £3. 10s. to £3. 12s. 6d. Rape cakes: Black Sea, £2. 7s. 6d. to £2. 10s.; East India, £3. 7s. 6d. per ton.

PAINTS.—Makers continue busy, and the situation generally is unchanged. Prices are:—White and red lead, also oxide of zinc, unchanged. Dry mineral colours, £3. 10s. to £8. per ton. Ready-mixed paints from £24 per ton. Paint remover, 25s. per cwt. Natural belt dubbin, 12s. per gallon. Oak varnish, 5s. 6d. per gallon.

## WEST OF SCOTLAND CHEMICALS.

GLASGOW, TUESDAY.

Since the break-up of the solid paraffin combine the prices have been reduced by all the makers. There was a kind of informal understanding that the reduction need not exceed three-sixteenths of a penny per lb. all over, including both scale and wax, and the change of figures made below is in accordance with that. But unquestionably some of the makers are taking less, and, in short, for the time there is nothing definite in the market. Lubricating oils are all higher, because of the temporary interruption to the Russian supply of the article through the partial wreck of the railway from the Caspian to the Black Sea. Sulphate of ammonia was last week bought for £8. 7s. 6d., the lowest point yet reached, and it is thought that the influence of the Beckton clearing-out selling will force the price lower still, although to-day there seems to be a slight rally. The price views of Continental correspondents of late are lower than ever they were. General chemicals are unchanged; prices steady, and only a moderate business doing.



Chief prices current are:—Soda crystals, £2. 2s. 6d., nett, Tyne; soda ash, 48/56°, £3. 15s. to £4. 15s. nett, Tyne; white alkali, 48/52°, £4. 10s. to £5. nett, Tyne; alum in lump, £5. 10s. nett, Glasgow; caustic soda, white, 76° £9. 5s., 70/72° £7. 10s., 60/62° £6. 10s., and cream 60/62° £6. 10s., all nett, Liverpool; bleaching powder, £6. 15s. to £7. 5s. nett, Tyne; saltcake, 27s. 6d.; borax, English, refined, £20., and boracic acid, £30. nett, Glasgow; bicarbonate of soda, 5-cwt. casks, £6. 10s., and 1-cwt. casks £6. 15s. nett, Liverpool; bichromate of potash, 4½d. nett, for Scotch and English deliveries (for export, 4¼d. nett, f.o.b. Glasgow); bichromate of soda, 3¼d. nett, for Scotch and English deliveries (for export, 3½d. nett, f.o.b. Glasgow); chlorate of potash, 4¼d. less 5%, Liverpool; nitrate of soda, 7s. 6d. to 7s. 10½d.; sulphate of ammonia, £8. 7s. 6d. to £8. 8s. 9d. prompt, f.o.b. Leith; salammioniac, first and second white, £39. and £37. nett, any port; sulphate of copper, £15. 12s. 6d. to £15. 15s., less 5%, Liverpool; paraffin scale, hard, 1½d., and soft, 1½d. to 1½d. per lb.; paraffin wax, 120° semi-refined, 2½d. to 2½d.; paraffin spirit (naphtha), 7½d. to 8d. per gallon; paraffin oil (burning) No. 1, 6½d., and crystal, 6¾d., at works, for Scotch buyers (English sales about ½d. lower); ditto (lubricating) 86½° £5., 88½° £5. 10s. to £6., and 89/89½° £6. to £6. 10s. Week's imports of sugar at Greenock were 4,194 bags beet unrefined.

### TYNE CHEMICAL REPORT.

TUESDAY.

In chemicals the tone of the market is still very quiet, though sales show a slight improvement. Soda crystals are £2. 2s. 6d. per ton, gross weights locally. Caustic soda, 76/77°, £9. 5s. per ton; 70%, £7. 10s. to £7. 15s. per ton. Sulphur scarce at £3. 17s. 6d. per ton. Other quotations as under:—

Bleaching powder, softs, £7. 5s. per ton, nett; hards, £7. 10s. per ton, nett; caustic soda, 76/77°, £9. 5s. per ton, nett; do., 70%, £7. 15s. per ton, nett; recovered sulphur, 2 cwt. bags, £3. 17s. 6d. per ton, nett; soda ash, 48%, £3. 15s. per ton, nett; do., 52%, £3. 17s. 6d. per ton, nett; do., 56%, £4. per ton, nett; alkali, 36%, £2. 15s. per ton, nett; white alkali, 48%, £4. 10s. per ton, nett; do., 50%, £4. 15s. per ton, nett; do., 52%, £5. per ton, nett; hyposulphite of soda, 5-7 cwt. casks, £6. 5s. per ton, nett; do., 1 cwt. kegs, £7. per ton, nett; silicate of soda, 75° Tw., £2. 12s. 6d. per ton, nett; do., 100° Tw., £3. per ton, nett; do., 140° Tw., £3. 7s. 6d. per ton, nett; soda crystals, casks, £2. 2s. 6d. per ton, nett weight; do., 2 cwt. bags, £2. 2s. 6d. per ton, nett weight; chlorate of potash, 5d. per lb., less 6%; pearl hardening, £3. per ton, nett; pure white sulphate of alumina, £3. 17s. 6d. per ton, nett; blanc fixe, £7. 5s. per ton, nett; chloride of barium, refined crystals, £6. 15s., per ton, nett; do., 90/95%, crude calcined, £6. per ton, nett; sulphide of barium, crystals, £4. 15s. per ton, nett; carbonate of alumina, £30. per ton, nett; aluminate of soda, £30. per ton, nett.

SALT.—South Durham salt is steady at 9s. 6d. per ton, f.o.b. Tees, for common.

COALS.—Trade is quiet, though sales of small steam coals are reported at higher prices. Coke is in fair demand, both for export and inland. To-day's prices are:—Best Northumbrian steam, 7s. 9d. to 7s. 10½d. per ton; second qualities, 6s. 9d. to 7s. per ton; small steam, firmer, 3s. 7½d. to 4s. per ton; Bunker coals, steady, 6s. 3d. to 6s. 6d. per ton; gas coals in full demand, 7s. to 7s. 6d. per ton; household coals, dull, 10s. to 11s. per ton; coke, firm, 14s. to 15s. per ton.

### New Companies.

**Fras y Go Salt Glazed Brick Co., Ltd.**—CAPITAL, £3,000, in £5. shares. This company has been formed to acquire certain land in Denbigh, and to carry on the business of salt and glazed brick, tile, and sanitary ware manufacturers.

**Metropolitan Paper Co., Ltd.**—CAPITAL, £12,000., in £1. shares. This company has been formed to acquire and carry on the business of paper makers, &c., now carried on at Merton Abbey Mills, Merton, Surrey. The subscribers to the memorandum of association are:—H. E. Edlmann, 17, Newton-road, Westbourne Grove, W., clerk; W. F. K. Underwood, 150, Fenchurch-street, E.C., secretary; E. Mabey, jun., 23, Lime-street, E.C., merchant; J. Goodey, 24, Norman-road, Wimbledon, clerk; J. Jones, 3, Wandle-road, Merton, paper maker; R. B. Hough, London Wharf, Ratcliffe, E., merchant; R. Hough, London Wharf, Ratcliffe, E., merchant.

**Alyn Steel Tinplate Co., Ltd.**—CAPITAL, £12,000., in £50. shares. This company has been formed to acquire the business of the Alyn Steel Tinplate Co., at Mold, Flintshire, and to carry on the business of ironmasters, tinplate and alkali manufacturers, etc. The subscribers to the memorandum of association are:—Mrs. E. Morgans, Alyn House, Mold; J. T. Morgans, Grosvenor-street, Mold, manager; Mrs. D. Williams, Caerfynnon, Mold; D. Williams, Caerfynnon, Mold, manager; Mrs. H. J. Roberts, High-street, Mold; H. J. Roberts, High-street, Mold, grocer; Miss M. Williams, Bromfield Hall, Mold.

### Gazette Notices.

#### PARTNERSHIP DISSOLVED.

A. TREGO, G. S. HUNT, AND W. W. SMITH, varnish and Japan manufacturers, New Broad-street, E.C., and Bow, E., under the style of Tabor, Trego, and Co.

BANKRUPTCY ACTS, 1883 and 1890.

Adjudication.

UNWIN, HENRY, Chesterton, brick and tile manufacturer.

### IMPORTS OF CHEMICAL PRODUCTS

#### THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

##### LONDON.

Week ending January 18th.

|                            |                         |  |
|----------------------------|-------------------------|--|
| <b>Acetanilide</b> —       |                         |  |
| Holland, 6 pks.            | Phillipps & Graves      |  |
| <b>Acetone</b> —           |                         |  |
| Holland, 2 pks.            | T. Palmer               |  |
| Germany, 10                | Chilworth Gunpowder Co. |  |
| Holland, 1                 | G. Rahn & Co.           |  |
| Germany, 2                 | Lister & Biggs          |  |
| <b>Alkali</b> —            |                         |  |
| France, 90 c.              | J. Harrison             |  |
| <b>Alum</b> —              |                         |  |
| Holland, 12 pks.           | Ohlenschlager Bros.     |  |
| <b>Ammonium Chloride</b> — |                         |  |
| Holland, 11 pks.           | H. Lorenz               |  |
| <b>Aniline Salts</b> —     |                         |  |
| Holland, 1 ck.             | Phillipps & Graves      |  |
| <b>Antimony Ore</b> —      |                         |  |
| Australia, 5 t.            | H. Bath & Son           |  |
| <b>Anthracene</b> —        |                         |  |
| Holland, 93 pks.           | Burt, Boulton & Co.     |  |
| <b>Asbestos</b> —          |                         |  |
| France, 46                 | Girard Frs. & Co.       |  |
| Germany, 45                | T. H. Lee               |  |
| <b>Barytes</b> —           |                         |  |
| Germany, 24 cks.           | O'Hara, Matthews & Co.  |  |

|                          |                             |  |
|--------------------------|-----------------------------|--|
| Belgium, 50              | Burrell & Co.               |  |
| " 104                    | W. Harrison & Co.           |  |
| Germany, 46              | "                           |  |
| Holland, 115             | "                           |  |
| " 24                     | J. Dickinson & Co.          |  |
| <b>Boracic Acid</b> —    |                             |  |
| Italy, 24 pks            | J. E. Malder                |  |
| <b>Bromide of Iron</b> — |                             |  |
| Germany, 10 pks.         | A. & M. Zimmermann          |  |
| <b>Bromine</b> —         |                             |  |
| Germany, 15 pks.         | A. & M. Zimmermann          |  |
| <b>Butyl Hydrate</b> —   |                             |  |
| Holland, 1 pkge.         | J. Barber & Co.             |  |
| <b>Campor</b> —          |                             |  |
| Germany, 70 pks.         | City Coml. Wf. Co.          |  |
| <b>Caoutchouc</b> —      |                             |  |
| France, 17 c.            | Prop. Bull Wf.              |  |
| Natal, 18                | "                           |  |
| Savannah, 2              | Lewis & Peat                |  |
| Aden, 32                 | L. & I. D. Jt. Co.          |  |
| E. Indies, 18            | W. M. Smith & Sons          |  |
| Belize, 3                | Belize Estate & Produce Co. |  |
| Zanzibar, 13             | L. & I. D. Jt. Co.          |  |
| Cape Town, 9             | "                           |  |
| China, 6                 | Clarke & Smith              |  |
| France, 2                | Arbuthnot, Ewart & Co.      |  |
| Singapore, 46            | Huttenbach & Co.            |  |
| Madagascar, 14           | L. & I. D. Jt. Co.          |  |

##### Castor Oil—

|                     |                      |  |
|---------------------|----------------------|--|
| France, 58 brls.    | J. T. Morton         |  |
| " 28                | C. Windschuegl & Co. |  |
| " 141               | Mordaunt Bros        |  |
| " 5 cs              | J. Barber & Co.      |  |
| Italy, 5            | L. & I. D. Jt. Co.   |  |
| France, 85          | Burrell & Co.        |  |
| E. Indies, 172 cks. | Cayzer, Irvine & Co. |  |
| " 43                | Ross & Deering       |  |

##### Caustic Potash—

|                 |                    |  |
|-----------------|--------------------|--|
| France, 40 pks. | J. Knight & Son    |  |
| " 43            | 64 drs. W. E. Cole |  |
| Belgium, 48     | 17 Petri Bros.     |  |
| France, 44      | Carey & Sons       |  |

##### Chemicals (otherwise undec.)—

|                  |                       |  |
|------------------|-----------------------|--|
| Germany, £15     | 1 cs. J. Barber & Co. |  |
| "                | Brit. Anti-Foul.      |  |
| "                | C & P. Co.            |  |
| France, 10       | W. Wright             |  |
| " 20             | L. P. D. Co.          |  |
| Germany, 60      | A. & M. Zimmermann    |  |
| " 9 pks. 19      | T. H. Lee             |  |
| France, 5 cks.   | A. Zumbach & Co.      |  |
| U. States, 65    | L. & I. D. Jt. Co.    |  |
| Holland, 10      | G. Rahn & Co.         |  |
| Germany, 7       | Phillipps & Graves    |  |
| Holland, 26 cks. | "                     |  |
| " 26 pks.        | B. & N. Wf. Co.       |  |

##### Cobalt Ore—

|                 |                    |  |
|-----------------|--------------------|--|
| Australia, 6 t. | Harris Bros. & Co. |  |
|-----------------|--------------------|--|

##### Copperas—

|                 |                    |  |
|-----------------|--------------------|--|
| Germany, 8 pks. | A. & M. Zimmermann |  |
|-----------------|--------------------|--|

##### Cream of Tartar—

|                |                    |  |
|----------------|--------------------|--|
| Spain, 10 pks. | W. C. Bacon & Co.  |  |
| France, 15     | B. & F. Wf. Co.    |  |
| " 3            | C. Atkins & Nisbet |  |
| " 2            | McNamara & Co.     |  |
| Spain, 3       | F. & L. Sittler    |  |
| France, 7      | W. C. Bacon & Co.  |  |
| " 3            | C. Atkins & Nisbet |  |

##### Creosote Salt—

|                 |           |  |
|-----------------|-----------|--|
| Germany, 3 pks. | T. Palmer |  |
|-----------------|-----------|--|

##### Dextrine—

|                  |           |  |
|------------------|-----------|--|
| Germany, 35 pks. | T. H. Lee |  |
| " 130            | H. Lorenz |  |

##### Dyestuffs—

|                   |                                 |  |
|-------------------|---------------------------------|--|
| <b>Argols</b>     |                                 |  |
| Italy, 743 pks.   | B. Jacob & Sons                 |  |
| " 35              | Thames S. T. & L. Co., Ltd.     |  |
| "                 | Mowatt                          |  |
| <b>Extracts</b>   |                                 |  |
| Belgium, 200 pks. | Sawer, Sons & Co.               |  |
| U. States, 51     | S. Barrow & Bros.               |  |
| France, 440       | T. H. Lee                       |  |
| B. Ayres, 10      | Beresford & Co.                 |  |
| Denmark, 20 cs.   | A. F. White & Co.               |  |
| France, 1         | Prop. Hay's Wf. Beresford & Co. |  |
| " 25              | "                               |  |



|                           |                            |                                 |      |                           |              |                                   |                             |                                          |                          |
|---------------------------|----------------------------|---------------------------------|------|---------------------------|--------------|-----------------------------------|-----------------------------|------------------------------------------|--------------------------|
| U. States, 60             | A. J. Humphrey             | Glue—                           | 550  | 3,132                     | E. & T. Pink | Holland, 1,950                    | Little & Johnston           | Borate of Lime—                          |                          |
| Germany, 200              | J. Knill & Co.             |                                 |      |                           |              | Germany, 650                      | Seaward Bros.               | Valparaiso, 553 bgs.                     |                          |
| <b>Gambier</b>            |                            | <b>Guano—</b>                   | £699 |                           |              | U. States, 220                    | Beck & Pollitzer            | <b>Borax—</b>                            |                          |
| Singapore, 161 pks.       | S. Barrow & Brs.           | Cape Cross, 200 t.              |      | C. Hunter & Co.           |              | " 200                             | R. G. Hall & Co.            | Antwerp, 5 cks.                          | A. & S.                  |
| 467                       | Brinkmann & Co.            |                                 |      |                           |              | Holland, 385                      | Oswego Co.                  | Valparaiso, 560 bgs.                     | Henry & Co.              |
| <b>Indigo</b>             |                            | <b>Lead Acetate—</b>            |      |                           |              | Belgium, 149                      | Phillipps & Graves          |                                          |                          |
| E. Indies, 112 chts.      | Ross & Deering             | Germany, 73 pks.                |      | F. Boehm                  |              | " 160                             | T. H. Lee                   | <b>Caoutchouc—</b>                       |                          |
| " 55                      | Walker, Munroe, & Co.      |                                 |      |                           |              | " 255                             | Sawer, Sons & Co.           | Valparaiso, 23 bls.                      | W. Brandt, Sons & Co.    |
| " 24                      | Croydale & Co.             | <b>Manganese—</b>               |      |                           |              | " 40                              | Prop. Scott's Wf            |                                          |                          |
| " 175                     | R. von Glehn & Sons        | Germany, 18 c.                  |      | Phillipps & Graves        |              | " 80                              | Ross & Deering              | <b>Castor Oil—</b>                       |                          |
| " 19                      | F. Huth & Co.              | Japan, 50 t.                    |      | C. S. Lovell              |              | Germany, 80                       | R. G. Hall & Co.            | Calcutta, 250 cs.                        | G. E. Wood               |
| " 40                      | Darling Bros.              | " 80                            |      | Fellows, Morton, & Co.    |              | U. States, 200                    | Phillipps & Graves          | Bombay, 15 cks.                          | J. J. Mack & Sons        |
| Spain, 16                 | J. Hall & Wilson           | <b>Manure—</b>                  |      |                           |              | Belgium, 100                      | T. Ronaldson & Co.          | Marseilles, 15 257 brls.                 |                          |
| E. Indies, 10             | Arbuthnot, Latham & Co.    | France, 6 pks.                  |      | Mory & Co.                |              | Holland, 60                       | R. Warner & Co.             |                                          |                          |
| " 21                      | Phillipps & Graves         | Germany, 30                     |      | E. Groschke               |              | Belgium, 344                      | Ohlenschlager Brs.          | <b>Chemicals (otherwise undescribed)</b> |                          |
| " 159                     | Patry and Pasteur          | " 45                            |      | F. W. Berk & Co.          |              | " 63                              | Leach & Co.                 | Rotterdam, 7 cs.                         |                          |
| " 28                      | Dipnall & Co.              | E. Indies, 250                  |      | A. Hunter & Co.           |              | <b>Stearine—</b>                  | A. Starck                   | <b>Cobalt—</b>                           |                          |
| " 34                      | J. Owen                    | Holland, 20                     |      | T. Farmer & Co.           |              | France, 20 bgs.                   | H. Hill & Sons              | Antwerp, 2 cs.                           |                          |
| " 19                      | Parsons & Keith            | Germany, 21                     |      | Petrifite, Ltd.           |              | Belgium, 130                      | G. Boor & Co.               | <b>Colours—</b>                          |                          |
| " 10                      | Ralli Brs.                 | " 5                             |      | J. Barber & Co.           |              | " 63                              | H. Hill & Sons              | Gheat, 1 brls.                           | J. T. Fletcher & Co.     |
| " 224                     | Lewis & Peat               | <b>Methyl Alcohol—</b>          |      |                           |              | <b>Sulphur—</b>                   | Taylor Brs.                 | <b>Copper Sulphate—</b>                  |                          |
| " 5                       | F. W. Heilgers             | Germany, 12 dms.                |      | Stein Brs.                |              | France, 6 t.                      | G. Boor & Co.               | Patras, 28 brls.                         | Hendry Brs.              |
| " 12                      | Thomasset & Co.            | Belgium, 7 cks.                 |      |                           |              | Italy, 50                         | A. Hunter & Co.             | <b>Cream of Tartar</b>                   |                          |
| " 55                      | H. Johnson & Sons          | <b>Mica</b>                     |      |                           |              | " 50                              | F. Smith                    | Barcelona, 5 cks. 8 brls.                |                          |
| " 11                      | E. Bower & Co.             | Madras, £45                     |      | F. Claydon & Co.          |              | " 23                              | A. Tumbeck & Co.            | Marseilles, 10                           |                          |
| " 3                       | A. E. Piggott              | Calcutta, 135                   |      | E. Davis & Co.            |              | <b>Sulphur Chloride—</b>          |                             | <b>Dye-stuffs—</b>                       |                          |
| " 420                     | 8 pks. F. Huth & Co.       | Madras, 2,290                   |      | W. M. Smith & Sons        |              | Holland, 20 pks.                  | Typke & King                | <b>Annatto</b>                           |                          |
| Ceylon, 2                 | L. & I. D. Jt. Co.         | Ceylon, 870                     |      |                           |              | <b>Talc—</b>                      | G. G. Blackwell Sons, & Co. | Bordeaux, 10 cks.                        | R. J. Francis & Co.      |
| E. Indies, 11             | Montgomery & Co.           | <b>Mollasses—</b>               |      |                           |              | France, £120                      |                             | <b>Argols</b>                            |                          |
| " 354                     | G. S. N. Co.               | U. States, 50 cks. 278 c.       |      | Maconochie Brs.           |              | <b>Tartaric Acid—</b>             |                             | Bordeaux, 37 cks.                        |                          |
| Ceylon, 15                |                            | Demerara, 5                     |      | H. Jackson                |              | Holland, 40 pks.                  | Kirkpatrick & Co.           | <b>Cochineal</b>                         |                          |
| <b>Logwood</b>            |                            | U. States, 200                  |      | J. Newcomb                |              | France, 4                         | W. C. Bacon & Co.           | Gd. Canary, 16 bgs.                      | Swanston & Co.           |
| Belize, 304 t.            | Belize Est. & Produce Co.  | <b>Ochre—</b>                   |      |                           |              | Holland, 4                        | F. C. Devon & Co.           | <b>Cutch</b>                             |                          |
| <b>Saffron</b>            |                            | France, 40 cks.                 |      | W. Harrison & Co.         |              | <b>Tartars—</b>                   |                             | Singapore, 550 bxs.                      |                          |
| Spain, 2 pks.             | C. Brunen & Son            | Holland, 6 cs.                  |      | Phillipps & Graves        |              | Italy, 17 pks.                    | Howards & Sons              | Rangoon, 2,600                           |                          |
| " 1                       | Hodgkinson, Treacher & Co. | <b>Oxalic Acid—</b>             |      |                           |              | <b>Turpentine—</b>                | Produce Brokers Co., Ltd.   | <b>Extracts</b>                          |                          |
| E. Turkey, 2              | Marshall & French          | Holland, 14 pks.                |      | Beresford & Co.           |              | Brunswick, 608 brls.              |                             | Fiume, 350 brls.                         | Oak Extract Co.          |
| <b>Shumac</b>             |                            | Norway, 5 t.                    |      | W. E. Bott & Co.          |              | <b>Ultramarine—</b>               |                             | Boston, 5                                |                          |
| Italy, 65 pks.            | Williams, Torrey & Co.     | France, 183                     |      | A. Hunter & Co.           |              | Holland, 5 cks.                   | Elkan & Co.                 | New York, 28 pkgs.                       |                          |
| " 500                     | Beresford & Co.            | <b>Phosphate of Lime—</b>       |      |                           |              | Belgium, 6 brls.                  | Phillipps & Graves          | Baltimore, 50                            | R. Schlotter & Sons      |
| " 500                     | Bevington & Sons           | Fernandina, 2,450 t.            |      | A. Hunter & Co.           |              | <b>Varnish—</b>                   | H. Davies                   | Marseilles, 35                           |                          |
| " 20                      | Cleeve Hooper              | <b>Phosphate Rock and Lime—</b> |      |                           |              | U. States, 5 pks.                 | Pinchin, Johnson, & Co.     | <b>Gambier</b>                           |                          |
| " 50                      | Skilbeck Brs.              | Belgium, 130 t.                 |      | Lawes Chemical Manure Co. |              | " 40                              | Suter, Hartman & Co.        | Singapore, 1,051 bls.                    | E. Boustead & Co.        |
| <b>Tanner's Bark</b>      |                            | France, 145                     |      | A. Hunter & Co.           |              | <b>White Lead—</b>                |                             | 10,288                                   | 1,162 bgs.               |
| Belgium, 10 t.            | J. Harrison                | <b>Plumbago—</b>                |      |                           |              | France, 19 cks.                   | J. Watt & Son               | <b>Indigo</b>                            |                          |
| A. Turkey, 117 t.         | Hicks, Nash & Co.          | Ceylon, 36 cks.                 |      | Anderson, Weber, & Smith  |              | France, 19 cks.                   | W. H. Carey & Sons          | Calcutta, 278 chts.                      |                          |
| " 100                     | A. Frey & Co.              | " 32                            |      | R. G. Hall & Co.          |              | Germany, 48                       | M. Ashby, Ltd.              | <b>Logwood</b>                           |                          |
| " 67                      | Amning & Cobb              | " 403                           |      | C. Rowbotham              |              | Belgium, 60                       | D. Storer & Sons            | Boston, 71 brls.                         |                          |
| <b>Farina—</b>            |                            | " 100 J. Thredder, Son, & Co.   |      |                           |              | Germany, 70                       | J. L. Lyon & Co.            | <b>Madder</b>                            |                          |
| Italy, 18 pks.            | C. Tennant, Sons & Co.     | <b>Potash—</b>                  |      |                           |              | Belgium, 21                       | Perkins & Homer             | Marseilles, 5 cks.                       |                          |
| France, 1                 | Hernu, Peron & Co.         | U. States, 172 c.               |      | Charles & Fox             |              | Germany, 21                       | Thames S. T. & L. Co.       | <b>Myrabolams</b>                        |                          |
| Holland, 1,350            | Little & Johnston          | <b>Potassium Bicarbonate—</b>   |      |                           |              | Holland, 68                       | Burrell & Co.               | Bombay, 200 bgs.                         | A. Ewart & Co.           |
| U. States, 150            | J. Barber & Co.            | Holland, 9 pks.                 |      | A. & M. Zimmermann        |              | " 19                              | S. H. Willoughby            | 3,174                                    |                          |
| Holland, 50               | J. Knill & Co.             | <b>Potassium Carbonate—</b>     |      |                           |              | " 48                              | Randall Bros.               | <b>Orchella</b>                          |                          |
| <b>Glucose—</b>           |                            | France, 200 c.                  |      | Charles & Fox             |              | <b>Wood Pulp—</b>                 |                             | Lisbon, 40 bls.                          | A. Barbora & Co.         |
| U. States, 25 pks. 153 c. | Vokins & Co.               | Germany, 61                     |      | W. G. Blagden             |              | Sweden, 254 pks.                  | Tough & Hender-son          | <b>Saffron</b>                           |                          |
| " 1,000                   | G. Clark & Son             | " 100                           |      | Petri Brs.                |              | Norway, 2,900                     | W. E. Bott & Co.            | Valencia, 1 cs.                          |                          |
| " 50                      | J. Keiller & Son           | France, 200 pks.                |      | B. & F. Wf. Co.           |              | Germany, 22                       | L. & I. D. Jt. Co.          | Bordeaux, 170 bls.                       | R. J. Francis & Co.      |
| " 500                     | C. Mangold & Co.           | Germany, 400 pks.               |      | W. G. Blagden             |              | Holland, 37                       | Thames S. T. & L. Co., Ltd. | Palermo, 60 bgs.                         | J. Kitchen, Ltd.         |
| Holland, 100              | J. Barber & Co.            | <b>Potassium Chloride—</b>      |      |                           |              | Denmark, 2,000                    | J. Sharp                    | Barcelona, 635 450 bls.                  |                          |
| U. States, 45             | B. & N. Whys. Co., Ltd.    | France, 350                     |      | W. E. Cole                |              | Holland, 2,153                    | E. J. & W. Goldsmith        | 200                                      |                          |
| " 1,675                   | Fellows, Morton, & Co.     | " 50                            |      | Charles & Fox             |              | <b>Zinc Oxide—</b>                |                             | Calcutta, 500 bgs.                       |                          |
| " 20                      | L. & I. D. Jt. Co.         | " 50                            |      | Petri Brs.                |              | Germany, 5 cks.                   | Beresford & Co.             | <b>Farina—</b>                           |                          |
| " 150                     | Union L. Co., Ltd.         | <b>Pumice Stone—</b>            |      |                           |              | Holland, 105                      | M. Ashby, Ltd.              | Trieste, 200 bgs.                        |                          |
| " 150                     | 900                        | Italy, 5 t. 10 c.               |      | G. Harvey                 |              | " 500                             | Soundy & Sons               | <b>Glucose—</b>                          |                          |
| " 360                     | Bennett S. S. Co.          | " 14                            |      | G. W. Largen              |              | Germany, 500                      | M. Ashby, Ltd.              | New York, 750 bgs.                       |                          |
| " 150                     | 860                        | " 7                             |      | W. Balchin                |              | Holland, 10 cks.                  | Fellows, Norton, & Co.      | Boston, 550 brls.                        |                          |
| " 100                     | 572                        | <b>Rosin—</b>                   |      |                           |              | <b>LIVERPOOL.</b>                 |                             | <b>Glue—</b>                             |                          |
| " 250                     | 250                        | Germany, 8 cks.                 |      | H. Lambert                |              | <b>Acetic Acid—</b>               |                             | Hamburg, 37 bgs.                         |                          |
| " 1,000                   | 1,000                      | U. States, 1,035 brls.          |      | G. Nutter                 |              | Rotterdam, 17 blns.               |                             | Marseilles, 74 cks. 160 bls.             |                          |
| " 250                     | 250                        | " 1,000                         |      | T. W. Beard               |              | <b>Albumen—</b>                   |                             | Rotterdam, 1                             |                          |
| " 1,000                   | 1,000                      | " 250                           |      | C. Tennant, Sons, & Co.   |              | Marseilles, 7 cs.                 |                             | <b>Iodine—</b>                           |                          |
| " 250                     | 250                        | <b>Salicylates—</b>             |      |                           |              | Boston, 3 cks. Animal Product Co. |                             | Valparaiso, 64 brls.                     |                          |
| " 750                     | 750                        | Holland, 20 pks.                |      | J. Barber & Co.           |              | <b>Barytes—</b>                   |                             | <b>Limestone—</b>                        |                          |
| " 500                     | 500                        | <b>Saltpetre—</b>               |      |                           |              | Antwerp, 7 cks. 100 bgs.          |                             | Antwerp, 1 crt.                          | J. T. Fletcher & Co.     |
| " 675                     | 1,340                      | Germany, 45 cks.                |      | J. Hall & Son             |              | Rotterdam, 112 100                |                             | <b>Magnesite—</b>                        |                          |
| " 95                      | 570                        | " 193                           |      | P. Hecker & Co.           |              | <b>Bone Ash—</b>                  |                             | Hamburg, 50 cs.                          |                          |
| " 5,782                   | 13,233                     | <b>Silica—</b>                  |      |                           |              | B. Ayres, 511 bgs.                | W. B. Dickinson             | <b>Manganese Ore—</b>                    |                          |
| France, 400               | 403                        | Sweden, £80                     |      | Beresford & Co.           |              | <b>Bone Meal—</b>                 |                             | Vizagapatam, 1,000 t.                    | Darwen & Mostyn Iron Co. |
| " 200                     | 200                        | <b>Sodium Hyposulphate—</b>     |      |                           |              | Bombay, 2,062 bgs.                |                             | Coquimbo, 985                            |                          |
| " 200                     | 200                        | Germany, 43 kgs.                |      | F. Boehm                  |              | <b>Boracite—</b>                  |                             | Lisbon, 900                              | Darwen & Mostyn Iron Co. |
| U. States, 50             | 275                        | Holland, 13 pks.                |      | Beresford & Co.           |              | Panderma, 150 t.                  | Roberts & Evans             | <b>Ochre—</b>                            |                          |
| " 50                      | 300                        | <b>Sodium Sulphate—</b>         |      |                           |              | " 6,435 bgs.                      |                             | Marseilles, 28 brls. 75 cs.              |                          |
|                           |                            | Holland, 4 pks.                 |      | Petri Brs.                |              |                                   |                             | Rouen, 21 cks.                           | R. J. Francis & Co.      |
|                           |                            | " 27                            |      | F. Pryor                  |              |                                   |                             |                                          |                          |
|                           |                            | <b>Starch—</b>                  |      |                           |              |                                   |                             |                                          |                          |
|                           |                            | Belgium, 120 pks.               |      | J. Harrison               |              |                                   |                             |                                          |                          |
|                           |                            | U. States, 100                  |      | G. Smith & Son            |              |                                   |                             |                                          |                          |



|                                                                                                                                                                    |  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <b>Oxalic Acid</b> —<br>Rotterdam, 8 cks.                                                                                                                          |  |
| <b>Paint</b> —<br>New York, 1 brl. Fowler Bros.,<br>" 2 Light, Brown & Co.<br>" 1 cs. 3 kgs. 9 pkgs.<br>Valparaiso, 1 Betteley & Co.<br>Marseilles, 12             |  |
| <b>Paraffin Scale</b> —<br>Baltimore, 300 brls.                                                                                                                    |  |
| <b>Phosphate</b> —<br>Ghent, 250 bgs.                                                                                                                              |  |
| <b>Pitch</b> —<br>Marseilles, 51 brls.<br>Amsterdam, 13 cks.                                                                                                       |  |
| <b>Plumbago</b> —<br>Venice, 100 bgs. G. Huntriss<br>& Co.                                                                                                         |  |
| <b>Potash</b> —<br>Rotterdam, 8 dms.                                                                                                                               |  |
| <b>Pyrites</b> —<br>Huelva, 1,324 t. Matheson & Co.                                                                                                                |  |
| <b>Rosin</b> —<br>New York, 20 brls. L. & N. W.<br>Rly. Co.                                                                                                        |  |
| <b>Salt</b> —<br>Hamburg, 134 cks.                                                                                                                                 |  |
| <b>Saltpetre</b> —<br>Calcutta, 165 bgs.                                                                                                                           |  |
| <b>Soap</b> —<br>Bari, 190 cs. 50 brls.<br>Naples, 381 25 bxs. Elder,<br>Boston, 3 Dempster & Co.<br>Jaffa, 108 3 pkgs.<br>Marseilles, 108                         |  |
| <b>Soapstone</b> —<br>Bordeaux, 100 bgs. G. G. Blackwell,<br>Sons & Co.                                                                                            |  |
| <b>Soda Crystals</b> —<br>Rouen, 6 cks. R. J. Francis<br>& Co.                                                                                                     |  |
| <b>Sodium Nitrate</b> —<br>Iquique, 6,062 bgs.                                                                                                                     |  |
| <b>Starch</b> —<br>Antwerp, 100 cs. J. T. Fletcher<br>Hamburg, 140 & Co.<br>New York, 700 bgs.<br>Hamburg, 160<br>Ghent, 60 J. T.<br>Rotterdam, 122 Fletcher & Co. |  |
| <b>Stearine</b> —<br>Antwerp, 13 bgs.                                                                                                                              |  |
| <b>Talc</b> —<br>Trieste, 50 bgs. F. Parisi                                                                                                                        |  |
| <b>Tallow</b> —<br>New York, 80 tcs. 200 hds.<br>B. Ayres, 14 cks. 350 hf.-pps.                                                                                    |  |
| <b>Tar</b> —<br>Venice, 65 brls.                                                                                                                                   |  |
| <b>Tartar</b> —<br>Bordeaux, 1 ck. R. J. Francis<br>& Co.<br>" 11                                                                                                  |  |
| <b>Tartaric Acid</b> —<br>Bordeaux, 20 cks.                                                                                                                        |  |
| <b>Tinical</b> —<br>Calcutta, 46 bgs.                                                                                                                              |  |
| <b>Varnish</b> —<br>New York, 27 brls. Johnson<br>& Co.                                                                                                            |  |
| <b>Verdigris</b> —<br>Bordeaux, 1 cs.                                                                                                                              |  |
| <b>Waste Salt</b> —<br>Hamburg, 800 t. Dobell & Co.                                                                                                                |  |
| <b>White Lead</b> —<br>Rotterdam, 101 cks.                                                                                                                         |  |
| <b>Wood Pulp</b> —<br>Rotterdam, 273 brls.                                                                                                                         |  |
| <b>Zinc Ashes</b> —<br>Marseilles, 12 brls.                                                                                                                        |  |
| <b>Zinc Oxide</b> —<br>Antwerp, 103 brls. 12 cks. 303 plts.                                                                                                        |  |
| <b>Zinc White</b> —<br>Hamburg, 95 cks.                                                                                                                            |  |

**MANCHESTER.**

Week ending January 18th.

|                                                 |  |
|-------------------------------------------------|--|
| <b>Albumen</b> —<br>Hamburg, 2 cs.              |  |
| <b>Alumina Sulphate</b> —<br>Rotterdam, 46 cks. |  |

|                                                                                                                                                                                             |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <b>Aluminous Cake</b> —<br>Rotterdam, 77 cks. 50 bgs.                                                                                                                                       |  |
| <b>Barytes</b> —<br>Rotterdam, 23 cks. 400 bgs.                                                                                                                                             |  |
| <b>Colours</b> —<br>Rotterdam, 37 cks. 48 cs. 52 brls.<br>Hamburg, 13 bxs. 1 1                                                                                                              |  |
| <b>Dextrine</b> —<br>Hamburg, 25 bgs.                                                                                                                                                       |  |
| <b>Dyestuffs</b> —<br><b>Alizarine</b><br>Rotterdam, 17 cks. 1 cs.<br><b>Extracts</b><br>Rotterdam, 5 cks.<br>Treport, 24 10 cs.<br><b>Logwood</b><br>Laguna de Terminos, 333 t.            |  |
| <b>Farina</b> —<br>Hamburg, 920 bgs.<br>Stettin, 670 1 cs.                                                                                                                                  |  |
| <b>Glucose</b> —<br>Hamburg, 90 cks.<br>New York, 250 brls. T. M. Duche<br>& Sons                                                                                                           |  |
| <b>Glue</b> —<br>Hamburg, 2 cks.<br>Antwerp, 2                                                                                                                                              |  |
| <b>Limestone</b> —<br>Antwerp, 2 cs.                                                                                                                                                        |  |
| <b>Litharge</b> —<br>Rotterdam, 7 cks.                                                                                                                                                      |  |
| <b>Methyl Aniline</b> —<br>Rotterdam, 2 cks.                                                                                                                                                |  |
| <b>Naphthol</b> —<br>Rotterdam, 4 cks.                                                                                                                                                      |  |
| <b>Oxalic Acid</b> —<br>Rotterdam, 7 blns.                                                                                                                                                  |  |
| <b>Pitch</b> —<br>Rotterdam, 41 brls.<br>Hamburg, 58 cks. 63                                                                                                                                |  |
| <b>Potash</b> —<br>Treport, 41 cks.                                                                                                                                                         |  |
| <b>Pyrites</b> —<br>Huelva, 1,720 t.                                                                                                                                                        |  |
| <b>Soap</b> —<br>Rotterdam, 5 cks.<br>Hamburg, 1 cs.                                                                                                                                        |  |
| <b>Sodium Nitrate</b> —<br>Rotterdam, 29 cks.                                                                                                                                               |  |
| <b>Starch</b> —<br>Hamburg, 148 cs.<br>New York, 100 bgs. T. M. Duche<br>& Sons                                                                                                             |  |
| <b>Stearine</b> —<br>Rotterdam, 13 bls.                                                                                                                                                     |  |
| <b>Sulphuric Acid</b> —<br>Rotterdam, 5 cs.                                                                                                                                                 |  |
| <b>Ultramarine</b> —<br>Rotterdam, 2 cks.                                                                                                                                                   |  |
| <b>Wood Pulp</b> —<br>Gefle, 3,341 bls. W. Gallagher &<br>Sons<br>Oxelsund, 1,496<br>Halifax, 10,351 bds. Chadwick &<br>N.S. Taylor<br>Borregaard, 4,225 bls. Kellner,<br>Partington, & Co. |  |
| <b>Zinc Oxide</b> —<br>Rotterdam, 120 cks. 25 brls.                                                                                                                                         |  |

**HULL.**

Week ending January 18th.

|                                                                                |  |
|--------------------------------------------------------------------------------|--|
| <b>Acid</b> —<br>Hamburg, 8 cks. Wilson,<br>Sons, & Co., Ltd.                  |  |
| <b>Albumen</b> —<br>Leghorn, 6<br>Hamburg, 4 cks. Wilson,<br>Sons, & Co., Ltd. |  |
| <b>Alum</b> —<br>Rotterdam, 37 cks. W. & C. L.<br>Ringrose                     |  |
| <b>Asbestos</b> —<br>Rotterdam, 6 bls. Hutchinson<br>& Son                     |  |
| <b>Barytes</b> —<br>Genoa, 12<br>Antwerp, 120 bgs. 35 cks. Bailey<br>& Leatham |  |
| <b>Bremen</b> —<br>41 cks.                                                     |  |
| <b>Castor Oil</b> —<br>Leghorn, 10 cs. Wilson,<br>Sons, & Co., Ltd.            |  |
| <b>Marseilles</b> —<br>10                                                      |  |

|                                                                                                                  |  |
|------------------------------------------------------------------------------------------------------------------|--|
| <b>Chemicals (otherwise undescribed)</b><br>Antwerp, 64 pks. 20 dms.<br>Wilson, Sons, & Co., Ltd.                |  |
| <b>Bremen</b> —<br>8 kgs. Veltmann<br>& Co.                                                                      |  |
| <b>Dunkirk</b> —<br>40 dms. Wilson,<br>Sons, & Co., Ltd.                                                         |  |
| <b>Colours</b> —<br>Rotterdam, 22 cks. Hutchinson<br>& Son<br>" 121 cs. 70 6 bxs. 5 brls.<br>W. & C. L. Ringrose |  |
| <b>Stettin</b> —<br>16 Sons, & Co., Ltd.                                                                         |  |
| <b>Antwerp</b> —<br>39 pks. 3 15 brls. "<br>Danzig, 20<br>Dunkirk, 17 "                                          |  |
| <b>Cottonseed Oil</b> —<br>New York, 25 brls. Wilson,<br>Sons, & Co., Ltd.                                       |  |
| <b>Cryolite</b> —<br>Copenhagen, 5 cks. Wilson,<br>Sons, & Co., Ltd.                                             |  |
| <b>Dextrine</b> —<br>Stettin, 232 bgs. Wilson,<br>Sons, & Co., Ltd.                                              |  |
| <b>Dyestuffs</b> —<br><b>Alizarine</b><br>Rotterdam, 100 cks. W. & C. L.<br>Ringrose                             |  |
| <b>Indigo</b> —<br>Rotterdam, 1 cht. Hutchinson<br>& Son                                                         |  |
| <b>Farina</b> —<br>Stettin, 260 bgs. Wilson,<br>Sons, & Co., Ltd.                                                |  |
| <b>Ghent</b> —<br>296 pgs. "<br>Dunkirk, 50 bgs. "                                                               |  |
| <b>Glucose</b> —<br>Rotterdam, 40 bgs. Hutchinson<br>& Son                                                       |  |
| <b>Amsterdam</b> —<br>50<br>New York, 300 50 brls. Wilson,<br>Sons, & Co., Ltd.                                  |  |
| <b>Bremen</b> —<br>New York, 100 770 brls.                                                                       |  |
| <b>Glue</b> —<br>Antwerp, 5 cs. Wilson,<br>Sons, & Co., Ltd.                                                     |  |
| <b>Rouen</b> —<br>74 cks. 37 bls. Rawson<br>& Robinson                                                           |  |
| <b>"Dunkirk</b> —<br>4<br>35 Sons, & Co., Ltd.                                                                   |  |
| <b>Guano</b> —<br>Christiansund, 500 bgs. Wilson,<br>Sons, & Co., Ltd.                                           |  |
| <b>Lysekil</b> —<br>5,330 Hart Bros.                                                                             |  |
| <b>Lamp Black</b> —<br>Ghent, 300 cks. Wilson,<br>Sons, & Co., Ltd.                                              |  |
| <b>Manure</b> —<br>Ghent, 700 bgs. Wilson,<br>Sons, & Co., Ltd.                                                  |  |
| <b>Molasses</b> —<br>New York, 475 brls. Wilson,<br>Sons, & Co., Ltd.                                            |  |
| <b>Ochre</b> —<br>Leghorn, 150 bgs.<br>Marseilles, 10 cks. Wilson,<br>Sons, & Co., Ltd.                          |  |
| <b>Rouen</b> —<br>40 Rawson & Robinson                                                                           |  |
| <b>Paint</b> —<br>New York, 25 cs. Wilson,<br>Sons, & Co., Ltd.                                                  |  |
| <b>Phosphate</b> —<br>Ghent, 816 bgs. Wilson,<br>Sons, & Co., Ltd.                                               |  |
| <b>Pitch</b> —<br>Hamburg, 30 brls. Wilson,<br>Sons, & Co., Ltd.                                                 |  |
| <b>Potash</b> —<br>Dunkirk, 16 cks. Wilson,<br>Sons, & Co., Ltd.                                                 |  |
| <b>Pumice Stone</b> —<br>Leghorn, 30 pks. Wilson,<br>Sons, & Co., Ltd.                                           |  |
| <b>Pyrites</b> —<br>Huelva, 1,369 t.                                                                             |  |
| <b>Saltpetre</b> —<br>Rotterdam, 135 bgs. Wilson,<br>Sons, & Co., Ltd.                                           |  |
| <b>Soap</b> —<br>Naples, 16 cs. Wilson,<br>Sons, & Co., Ltd.                                                     |  |
| <b>"Marseilles</b> —<br>37<br>4<br>2 "                                                                           |  |
| <b>Starch</b> —<br>Amsterdam, 40 cs. Hutchinson<br>& Son                                                         |  |

|                                                                     |  |
|---------------------------------------------------------------------|--|
| <b>Bremen</b> —<br>1,167 Veltmann & Co.                             |  |
| <b>Stearine</b> —<br>Antwerp, 50 bgs. Wilson,<br>Sons, & Co., Ltd.  |  |
| <b>Talc</b> —<br>Genoa, 100 bgs.                                    |  |
| <b>Tallow</b> —<br>Boston, 548 pkgs. Wilson,<br>Sons, & Co., Ltd.   |  |
| <b>New York</b> —<br>10 tubs. 60 brls. Wilson,<br>Sons, & Co., Ltd. |  |
| <b>Dunkirk</b> —<br>31 cks. "                                       |  |
| <b>Tar</b> —<br>Hamburg, 10 brls. Wilson,<br>Sons, & Co., Ltd.      |  |
| <b>Tartar</b> —<br>Marseilles, 5 cks. Wilson,<br>Sons, & Co., Ltd.  |  |
| <b>Treacle</b> —<br>Boston, 50 brls. Wilson,<br>Sons, & Co., Ltd.   |  |
| <b>New York</b> —<br>725 "                                          |  |
| <b>Ultramarine</b> —<br>Rotterdam, 8 cks. Hutchinson<br>& Son       |  |
| <b>White Lead</b> —<br>Ghent, 8 cks. Wilson,<br>Sons, & Co., Ltd.   |  |
| <b>Amsterdam</b> —<br>26 W. & C. L. Ringrose                        |  |
| <b>Wood Pulp</b> —<br>Hango, 92 bls. W. Shipstone<br>& Co.          |  |
| <b>"</b> —<br>28 Furley & Co.                                       |  |
| <b>Rotterdam</b> —<br>25 pks. Hutchinson<br>& Son                   |  |

**GLASGOW.**

Week ending January 23rd.

|                                                                                                                                                                                                                                                                            |  |
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| <b>Acetone</b> —<br>Hamburg, 24 dms.                                                                                                                                                                                                                                       |  |
| <b>Ammonium Nitrate</b> —<br>Rotterdam, 62 cks.                                                                                                                                                                                                                            |  |
| <b>Barium Sulphate</b> —<br>Hamburg, 800 bgs.<br>Antwerp, 200                                                                                                                                                                                                              |  |
| <b>Barytes</b> —<br>Halifax, 35 cks. White Lead<br>Co., Ltd.                                                                                                                                                                                                               |  |
| <b>Chemicals (otherwise undescribed)</b><br>Hamburg, 12 cks. 2 cs.                                                                                                                                                                                                         |  |
| <b>Cod Oil</b> —<br>St. John's, N.F., 1,065 cks. John Murray<br>& Son                                                                                                                                                                                                      |  |
| <b>Cream of Tartar</b> —<br>Barcelona, 5 cks.                                                                                                                                                                                                                              |  |
| <b>Dyestuffs</b> —<br><b>Alizarine</b><br>Rotterdam, 81 pkgs.<br><b>Gutch</b><br>Boston, 250 bxs.<br><b>Extracts</b><br>Baltimore, 50 brls. M'Arthur,<br>Scott & Co.<br>Fiume, 300 Geo. Dickson<br><b>Logwood</b><br>Forte Libert (Hayti), 250 t. M'Arthur,<br>Scott & Co. |  |
| <b>Dyestuffs (otherwise undes.)</b> —<br>New York, 3 cs.                                                                                                                                                                                                                   |  |
| <b>Farina</b> —<br>Delfsyzhl, 58 bgs.                                                                                                                                                                                                                                      |  |
| <b>French Chalk</b> —<br>Fiume, 50 bgs. Robertson,<br>M'Intosh & Co.                                                                                                                                                                                                       |  |
| <b>"</b> —<br>250                                                                                                                                                                                                                                                          |  |
| <b>Glue</b> —<br>Rotterdam, 20 bls. J. Rankine<br>& Son                                                                                                                                                                                                                    |  |
| <b>Hamburg</b> —<br>60 bgs. 8 cks. 5 brls.                                                                                                                                                                                                                                 |  |
| <b>Boston</b> —<br>200                                                                                                                                                                                                                                                     |  |
| <b>Fiume</b> —<br>200                                                                                                                                                                                                                                                      |  |
| <b>Infusorial Earth</b> —<br>Hamburg, 58 bgs.                                                                                                                                                                                                                              |  |
| <b>Iron Oxide</b> —<br>Trieste, 26 cks. Ferguson &<br>Reid                                                                                                                                                                                                                 |  |
| <b>Lead Acetate</b> —<br>Hamburg, 14 cks.                                                                                                                                                                                                                                  |  |



|                                                                |                                                                 |                                                         |                                           |
|----------------------------------------------------------------|-----------------------------------------------------------------|---------------------------------------------------------|-------------------------------------------|
| <b>Manganese</b> —<br>Hamburg, 7 cks.                          | <b>Turpentine</b> —<br>Savannah, 1,650 brls.                    | <b>Slag</b> —<br>Carthage, 49 t. J. Cameron, Swan & Co. | <b>Delfsyzhl</b> , 1,133                  |
| <b>Oxalic Acid</b> —<br>Rotterdam, 8 cks.                      | <b>Ultramarine</b> —<br>Hamburg, 5 cs.                          | <b>Starch</b> —<br>Rotterdam, 80 cs. Tyne S. S. Co.     | <b>Glucose</b> —<br>Hamburg, 100 bgs.     |
| <b>Painters' Colours</b> —<br>Rotterdam, 5 cks. 1 cs. 92 pkgs. | <b>Waste Salt</b> —<br>Hamburg, 279 cks.                        | <b>Wood Pulp</b> —<br>Holmestrand, 1,000 bls.           | <b>Glue</b> —<br>Boulogne, 4 cks.         |
| <b>Potash</b> —<br>Hamburg, 40 cks.                            | <b>White Lead</b> —<br>Antwerp, 6 cks.                          |                                                         | <b>Saltpetre</b> —<br>Hamburg, 12 cks.    |
| <b>Potassium Nitrate</b> —<br>Hamburg, 68 cks.                 | <b>Wood Pulp</b> —<br>Fiume, 204 bls.                           |                                                         | <b>Soda</b> —<br>Rotterdam, 40 brls.      |
| <b>Pyrites</b> —<br>Huelva, 2 brls. 2 bxs. Thar-is Co.         | <b>Zinc Oxide</b> —<br>Antwerp, 13 cks.                         |                                                         | <b>Waste Salt</b> —<br>Hamburg, 945 cks.  |
| <b>Rosin</b> —<br>Savannah, 2,009 brls. J. Parker              | <b>Zinc Sulphate</b> —<br>Rotterdam, 7 brls.                    |                                                         | <b>Wood Pulp</b> —<br>Hamburg, 736 bls.   |
| <b>Saltpetre</b> —<br>Calcutta, 1 cs.                          |                                                                 |                                                         |                                           |
| <b>Soap</b> —<br>Fiume, 122 cs.                                | <b>TYNE.</b>                                                    | <b>GOOLE.</b>                                           | <b>GRIMSBY.</b>                           |
| <b>Starch</b> —<br>Antwerp, 120 cs.                            | <i>Week ending January 18th.</i>                                | <i>Week ending January 15th.</i>                        | <i>Week ending January 18th.</i>          |
| <b>Stearine</b> —<br>Rotterdam, 14 cks.                        | <b>Alum Earth</b> —<br>Hamburg, 34 cks. Tyne S. S. Co.          | <b>Alkali</b> —<br>Calais, 5 cks.                       | <b>Albumen</b> —<br>Hamburg, 9 cks.       |
| <b>Sulphur Ore</b> —<br>Huelva, 1,854 t. Rio Tinto Co.         | <b>Barium Carbonate</b> —<br>Rotterdam, 230 bgs. Tyne S. S. Co. | <b>Alum</b> —<br>Rotterdam, 12 brls.                    | <b>Caoutchouc</b> —<br>Hamburg, 9 cs.     |
| <b>Tallow</b> —<br>Boston, 10 hhd's.                           | <b>God Oil</b> —<br>Trondhjem, 5 brls.                          | <b>Barytes</b> —<br>Rotterdam, 100 bgs.                 | <b>Colours</b> —<br>Hamburg, 8 cks. 6 cs. |
| <b>Tartar</b> —<br>Oporto, 10 cks.                             | <b>Colours</b> —<br>Hamburg, 5 cs. Tyne S. S. Co.               | <b>Dyestuffs</b> —<br>Alizarine, 53 brls.               | <b>Dyes</b> —<br>Hamburg, 41 pkgs.        |
|                                                                | <b>Glue</b> —<br>Trondhjem, 1 b.l.                              | <b>Indigo</b> —<br>Rotterdam, 37 chts.                  | <b>Farina</b> —<br>Hamburg, 50 bgs.       |
|                                                                | <b>Phosphoric Acid</b> —<br>Hamburg, 2 cs. Tyne S. S. Co.       | <b>Logwood</b> —<br>Jamaica, 415 t.                     | <b>Pitch</b> —<br>Dieppe, 10 cks.         |
|                                                                | <b>Plumbago</b> —<br>Hamburg, 4 cks. Tyne S. S. Co.             | <b>Madder</b> —<br>Hamburg, 133                         | <b>Starch</b> —<br>Antwerp, 88 cs.        |
|                                                                |                                                                 | <b>Dyestuffs (otherwise undescribed)</b>                | <b>Wood Pulp</b> —<br>Malmo, 80 bls.      |
|                                                                |                                                                 | <b>Farina</b> —<br>Hamburg, 100 bgs.                    |                                           |

## EXPORTS OF CHEMICAL PRODUCTS

OF

## THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

|                                                  |                                                |                                              |                                             |
|--------------------------------------------------|------------------------------------------------|----------------------------------------------|---------------------------------------------|
| <b>LONDON.</b>                                   | <b>Citric Acid</b> —<br>Rotterdam, 5 kgs. 5 c. | <b>Melbourne</b> , 10 runs.                  | <b>Phosphoric Acid</b> —<br>Boulogne, 2 cs. |
| <i>Week ending January 22nd.</i>                 | Bombay, 2                                      | Hamburg, 264 brls.                           | <b>Phosphorus</b> —<br>Havre, 4 cs.         |
| <b>Acids</b> —<br>Mombassa, 6 cs.                | Natal, 2                                       | <b>Coal Products (otherwise undescribed)</b> | Dunedin, 10                                 |
| Adelaide, 3 5 cks.                               | Melbourne, 5                                   | Rotterdam, 6 brls.                           |                                             |
| <b>Alkali</b> —<br>New York, 9 c.                | Montreal, 1 t. 2                               | <b>Copper Sulphate</b> —<br>Rouen, 5 t. 5 c. |                                             |
| Auckland, 20 t.                                  | Toronto, 11                                    | Hobart, 1 2                                  |                                             |
| <b>Ammonia (Liquid)</b> —<br>Hamburg, 3 t. 13 c. | <b>Coal Products</b> —<br>Alizarine, 6 cks.    | Treport, 5                                   |                                             |
| <b>Ammonium Carbonate</b> —<br>Lisbon, 5 cks.    | Aniline Oil, 5 drs.                            | <b>Copperas</b> —<br>Adelaide, 11 t. 16 c.   |                                             |
| Rouen, 25 brls.                                  | New York, 12                                   | Algoa Bay, 20 frkns.                         |                                             |
| New York, 25                                     | <b>Aniline Salts</b>                           | <b>Cream of Tartar</b> —<br>Adelaide, 1 t.   |                                             |
| E. London, 4 cs.                                 | Anthracene, 58 cks.                            | Fremantle, 5 c.                              |                                             |
| <b>Ammonium Chloride</b> —<br>Adelaide, 4 cks.   | Dusseldorf, 133 cks.                           | Dunedin, 1 10                                |                                             |
| <b>Ammonium Sulphate</b> —<br>Bremen, 100 t.     | Cologne, 468                                   | Hobart, 11                                   |                                             |
| Ostend, 10                                       | <b>Benzol</b>                                  | <b>Disinfectants</b> —<br>Colombo, 38 pks.   |                                             |
| Hamburg, 60                                      | Rotterdam, 10 puns. 9 pps.                     | Cannanore, 3                                 |                                             |
| Canaria, 22 10 c.                                | Hamburg, 65 cks.                               | Antigua, 2                                   |                                             |
| Dunkirk, 2 0                                     | <b>Carbolic Acid</b>                           | San Francisco, 75 drs.                       |                                             |
| Demerara, 40                                     | Newport News, 50 brls.                         | Cape Town, 2 t. 15 c.                        |                                             |
| Ghent, 310 10                                    | S. Paulo, 60 cs.                               | Delagoa Bay, 6 cs. 26                        |                                             |
| <b>Boracic Acid</b> —<br>Sydney, 1 t. 5 c.       | Brussels, 40 cans                              | Hamburg, 25 cks. 125                         |                                             |
| <b>Borax</b> —<br>Adelaide, 10 c.                | Rotterdam, 49 cks.                             | Calcutta, 9 14                               |                                             |
| Melbourne, 2 t.                                  | Jamaica, 27 pks. 34                            | Natal, 12 drs.                               |                                             |
| Delagoa Bay, 5 cs.                               | Colombo, 8                                     | Sydney, 50                                   |                                             |
| <b>Caustic Soda</b> —<br>Algoa Bay, 1 t. 11 c.   | Dusseldorf, 42                                 | <b>Guano</b> —<br>Mauritius, 25 t.           |                                             |
| Hobart, 5 3                                      | <b>Coal Tar Dyes</b>                           | Demerara, 160                                |                                             |
| Dunedin, 6                                       | Calcutta, 5 pks.                               | <b>Magnesia</b> —<br>Desterro, 4 cs.         |                                             |
| Lyttelton, 11 3                                  | Greosote, 500 brls.                            | Melbourne, 1 t.                              |                                             |
| Delagoa Bay, 15                                  | Dieppe, 23,500 gallons                         | <b>Manure</b> —<br>Ghent, 15 t. 12 c.        |                                             |
| Melbourne, 6 6                                   | <b>Naphtha</b>                                 | Hamburg, 2 10                                |                                             |
| E. London, 1                                     | Sydney, 50 drs.                                | Barfleur, 136                                |                                             |
| <b>Chemicals (otherwise undescribed)</b>         | <b>Naphthaline</b>                             | Rochefort, 120 9                             |                                             |
| Gothenburg, 9 cks.                               | Hamburg, 646 bgs.                              | Canaria, 8 10                                |                                             |
| S. Lucia, 8 1 carboy                             | Amsterdam, 30                                  | Cape Town, 62                                |                                             |
| Copenhagen, 5                                    | <b>Nitro-Naphthaline</b>                       | Mauritius, 100                               |                                             |
| B. Ayres, 1 cs. 35                               | Marseilles, 3 cks.                             | Treginer, 120                                |                                             |
| Bombay, 2 1                                      | <b>Paraffin Wax</b>                            | Limon, 5 7                                   |                                             |
| Delagoa Bay, 2 19                                | Paris, 25 cs.                                  | Jersey, 137                                  |                                             |
| Adelaide, 20 kgs. 13 c. 12                       | <b>Pitch</b>                                   | Guernsey, 16 4                               |                                             |
| Madras, 10 25                                    | Cologne, 5 brls.                               | Teneriffe, 10 5                              |                                             |
|                                                  | Antwerp, 800 t.                                | Martinique, 310                              |                                             |
|                                                  | Chantenay, 1,249                               | <b>Oxalic Acid</b> —<br>Lisbon, 4 cks.       |                                             |
|                                                  | Dunkirk, 145                                   | <b>Phosphate</b> —<br>Surinam, 20 t.         |                                             |
|                                                  | Havre, 925                                     |                                              |                                             |
|                                                  | <b>Pyridine</b>                                |                                              |                                             |
|                                                  | Antwerp, 53 cks.                               |                                              |                                             |
|                                                  | <b>Tar</b>                                     |                                              |                                             |
|                                                  | Sydney, 200 drs.                               |                                              |                                             |
|                                                  | Madras, 150 brls.                              |                                              |                                             |



|                          |            |      |
|--------------------------|------------|------|
| <b>Sodium Carbonate—</b> |            |      |
| E. London,               | 5 c.       | £8   |
| <b>Sodium Sulphate—</b>  |            |      |
| Ghent,                   | 100 t.     | £100 |
| <b>Sulphur—</b>          |            |      |
| Punta Arenas,            | 10 t. 1 c. | £93  |
| Newcastle,               | 5          | 26   |
| Alcoa Bay,               | 150 kgs.   | 77   |
| <b>Sulphuric Acid—</b>   |            |      |
| Singapore,               | 1 t. 18 c. | £18  |
| <b>Superphosphate—</b>   |            |      |
| Bordeaux,                | 20 t.      | £50  |
| Cherbourg,               | 110        | 375  |
| Mauritius,               | 343        | 927  |
| Beypore,                 | 10         | 50   |
| <b>Tartaric Acid—</b>    |            |      |
| Adelaide,                | 1 t.       | £119 |
| Fremantle,               | 5 c.       | 32   |
| Rangoon,                 | 1 cs.      | 13   |
| Melbourne,               | 10 5 kgs.  | 26   |
| Hobart,                  | 6          | 26   |
| Sydney,                  | 10         | 60   |

**LIVERPOOL.**

Week ending January 22nd.

|                            |                 |        |
|----------------------------|-----------------|--------|
| <b>Acetate of Lime—</b>    |                 |        |
| Santos,                    | 1 t. 19 c. 3 q. | £19    |
| <b>Acid—</b>               |                 |        |
| Tampico,                   | 6 cs.           |        |
| <b>Albumeu—</b>            |                 |        |
| Rouen,                     | 12 c. 3 q.      | £6     |
| <b>Alum—</b>               |                 |        |
| Bourgas,                   | 1 t.            | £5     |
| Smyrna,                    | 4 2 c. 3 q.     | 20     |
| Havana,                    | 6               | 20     |
| Cape Town,                 | 18 2            | 5      |
| Casablanca,                | 1 5 2           | 6      |
| B. Ayres,                  | 5 5             | 23     |
| Rio de Janeiro,            | 1               | 5      |
| Piraeus,                   | 3 10            | 18     |
| Adelaide,                  | 1 10            | 8      |
| Brisbane,                  | 1               | 5      |
| Melbourne,                 | 6               | 27     |
| Sydney,                    | 6               | 28     |
| <b>Alumino-ferrie—</b>     |                 |        |
| Kingston, Ont.,            | 5 t. 6 c.       | £19    |
| <b>Alumin. us Cake—</b>    |                 |        |
| Calcutta,                  | 26 t. 8 c. 2 q. | £94    |
| <b>Ammonia—</b>            |                 |        |
| Hioo,                      | 1 t. 2 c.       | £41    |
| <b>Ammonium Carbonate—</b> |                 |        |
| Bordeaux,                  | 1 t. 5 c.       | £39    |
| Trieste,                   | 5 2 q.          | 8      |
| M. Video,                  | 19              | 32     |
| Vera Cruz,                 | 1               | 5      |
| Marseilles,                | 1               | 32     |
| Vigo,                      | 12              | 20     |
| <b>Ammonium Chloride—</b>  |                 |        |
| Melbourne,                 | 1 ck.           | £10    |
| Larnaca,                   | 4 c.            | 7      |
| Antwerp,                   | 1 t.            | 24     |
| Calcutta,                  | 4 10            | 160    |
| Kurrachee,                 | 2 5             | 83     |
| <b>Ammonium Sulphate—</b>  |                 |        |
| Leghorn,                   | 20 t.           | £235   |
| Carthagena (Spn.),         | 10              | 119    |
| Palermo,                   | 16 6 c. 3 q.    | 131    |
| Valencia,                  | 70 13 3         | 709    |
| Malaga,                    | 18 9 1          | 152    |
| Genoa,                     | 20 7 1          | 175    |
| Rouen,                     | 10              | 86     |
| Las Palmas,                | 46 6 3          | 398    |
| Baltimore,                 | 99 15           | 960    |
| San Francisco,             | 154 8 1         | 1,317  |
| <b>Antimony—</b>           |                 |        |
| La Libertad,               | 1 ck.           |        |
| <b>Arsenic—</b>            |                 |        |
| San Francisco,             | 1 t. 15 c. 3 q. | £31    |
| <b>Asbestos—</b>           |                 |        |
| Antwerp,                   | 2 trs.          |        |
| Cape Town,                 | 20 cs.          |        |
| <b>Bleaching Powder—</b>   |                 |        |
| Alexandria,                | 3 cks 10 brls.  |        |
| Baltimore,                 | 67              |        |
| Bilbao,                    | 31              |        |
| Bombay,                    | 88              | 15 cs. |
| Bordeaux,                  | 1,386           |        |
| Calcutta,                  | 308             |        |
| Chicago,                   |                 | 5 bxs. |
| Genoa,                     | 94              |        |
| Nantes,                    | 30              |        |
| Naples,                    | 39              |        |
| Newport News,              | 238             |        |
| New York,                  | 648             |        |
| Passages,                  | 15              |        |
| Philadelphia,              | 382             |        |
| Portland, M.,              | 100             |        |

|                        |                 |                   |
|------------------------|-----------------|-------------------|
| Rio de Janeiro,        | 30 bls.         |                   |
| St. John, N.B.,        | 10              |                   |
| San Sebastian,         | 28              |                   |
| Vera Cruz,             | 10              |                   |
| <b>Boracic Acid—</b>   |                 |                   |
| Hamburg,               | 5 t. 7 c. 2 q.  | £162              |
| Antwerp,               | 15              | 24                |
| Yokohama,              | 3               | 78                |
| <b>Borax—</b>          |                 |                   |
| Hamburg,               | 24 t. 4 c. 1 q. | £484              |
| Antwerp,               | 27 3 3          | 544               |
| Rio de Janeiro,        | 6 12 3          | 133               |
| Rotterdam,             | 5 1 2           | 101               |
| Barcelona,             | 3               | 61                |
| Sydney,                | 5               | 5                 |
| Pt. Natal,             | 14 t. 1 c.      | £31               |
| <b>Caoutchouc—</b>     |                 |                   |
| New York,              | 2 cs.           |                   |
| Santos,                | 11              |                   |
| <b>Carbolic Acid—</b>  |                 |                   |
| Dunkirk,               | 13 t.           | £163              |
| Hamburg,               | 1 8 c.          | 77                |
| Calcutta,              | 3 5             | 51                |
| Boston,                | 1               | 7                 |
| Genoa,                 | 1 9 2 q.        | 79                |
| Odessa,                | 1 6             | 55                |
| Yokohama,              | 12 10           | 712               |
| Baltimore,             | 6 5 3           | 308               |
| <b>Castor Oil—</b>     |                 |                   |
| Addah,                 | 100 cs.         |                   |
| <b>Caustic Potash—</b> |                 |                   |
| New York,              | 10 c.           | £15               |
| <b>Caustic Soda—</b>   |                 |                   |
| Adelaide,              | 05 dms.         |                   |
| Alexandria,            | 31 40 kgs.      | 6 cs.             |
| Alcoa Bay,             |                 |                   |
| Amsterdam,             | 30              |                   |
| Aracaju,               | 10              |                   |
| Baltimore,             | 140             |                   |
| Barcelona,             | 280             | 148 cks. 28 brls. |
| Bari,                  | 35              |                   |
| Bilbao,                | 15              | 27                |
| Bombay,                | 63              |                   |
| Boston,                | 100             | 100               |
| Brisbane,              | 35              |                   |
| B. Ayres,              | 100             |                   |
| Callao,                | 170             |                   |
| Cardenas,              | 10              |                   |
| Catania,               | 5               |                   |
| Chicago,               | 10 bxs.         |                   |
| Constantinople,        | 15              |                   |
| Coquimbo,              | 20              |                   |
| Corfu,                 | 30              |                   |
| Corinto,               | 20              | 7 cs.             |
| Corunna,               | 12              |                   |
| Corral,                | 30              |                   |
| Dunkirk,               | 35              |                   |
| E. London,             | 13              |                   |
| Fairwater,             | 177             |                   |
| Fiume,                 | 30              |                   |
| Funchal,               | 5               |                   |
| Genoa,                 | 392             |                   |
| Halifax,               | 75              |                   |
| Hamburg,               | 195             | 3 brls.           |
| Iquique,               | 25              |                   |
| La Guayra,             | 42              |                   |
| Leghorn,               | 119             |                   |
| Libau,                 | 158             |                   |
| Madeira,               | 10              |                   |
| Malaga,                | 180             |                   |
| Marseilles,            | 26              |                   |
| Mauritius,             | 90              |                   |
| Melbourne,             | 120             |                   |
| Messina,               | 103             |                   |
| Nagasaki,              | 190             |                   |
| N Orleans,             | 25              |                   |
| New York,              | 435             | 20 bxs. 100       |
| Odessa,                | 250             |                   |
| Oporto,                | 100             |                   |
| Palermo,               | 10              |                   |
| Paris,                 | 92              |                   |
| Pernambuco,            | 50              |                   |
| Philadelphia,          | 50              |                   |
| Rio de Janeiro,        | 30              |                   |
| Rotterdam,             | 99              |                   |
| Rouen,                 | 35              |                   |
| St. John, N.B.,        | 50              |                   |
| San Francisco,         | 750             | 15 cks.           |
| San Sebastian,         | 54              |                   |
| Seville,               | 415             | 50 tins.          |
| Singapore,             | 25              |                   |
| Sourabaya,             | 25              |                   |
| Sydney,                | 54              |                   |
| Talcahuano,            | 125             |                   |
| Tampico,               | 310             |                   |
| Tarragona,             | 40              |                   |
| Trieste,               | 10              |                   |
| Trinidad,              | 7               |                   |
| Venice,                | 5               |                   |
| Vera Cruz,             | 30              |                   |
| Vigo,                  | 20              |                   |
| Yokohama,              | 96              |                   |

|                                         |                 |                 |
|-----------------------------------------|-----------------|-----------------|
| <b>Chemicals (otherwise undescrbed)</b> |                 |                 |
| New York,                               | 14 t. 17 c.     | £490            |
| Calcutta,                               | 12 13 2 q.      | 92              |
| Kurrachee,                              | 18              | 31              |
| Philadelphia,                           | 13 4            | 430             |
| <b>China Clay—</b>                      |                 |                 |
| Bombay,                                 | 15 t.           |                 |
| Boston,                                 | 961 2,297 cks.  |                 |
| Lisbon,                                 | 11 1 c.         |                 |
| Naples,                                 | 27              |                 |
| New York,                               | 140 bgs.        |                 |
| Philadelphia,                           |                 | 359             |
| Portland, M.,                           |                 | 212             |
| Santos,                                 |                 | 4               |
| <b>Citric Acid—</b>                     |                 |                 |
| Ponce,                                  | 1 c.            | £8              |
| Santos,                                 | 2               | 12              |
| <b>Coal Products—</b>                   |                 |                 |
| Alizarine                               |                 |                 |
| Santos,                                 | 13 cs.          |                 |
| <b>Alizarine Oil</b>                    |                 |                 |
| Lisbon,                                 | 5 cks.          |                 |
| <b>Aniline Colours</b>                  |                 |                 |
| Boston,                                 | 2 kgs.          |                 |
| <b>Aniline Oil</b>                      |                 |                 |
| Genoa,                                  | 1 dm.           |                 |
| <b>Aniline Salts</b>                    |                 |                 |
| Boston,                                 | 93 cs. 5 dms.   |                 |
| New York,                               | 43 cks.         |                 |
| Santos,                                 | 2               |                 |
| <b>Creosote Oil</b>                     |                 |                 |
| Lisbon,                                 | 550 brls.       |                 |
| <b>Mirbane Oil</b>                      |                 |                 |
| New York,                               | 25 cs.          |                 |
| <b>Pitch</b>                            |                 |                 |
| Cette,                                  | 868 t.          |                 |
| Marseilles,                             | 195             |                 |
| Rouen,                                  | 2 cks.          |                 |
| <b>Tar</b>                              |                 |                 |
| Genoa,                                  | 1 ck.           |                 |
| Philadelphia,                           | 100 brls.       |                 |
| Pt. Natal,                              | 10              | 80 dms. 3 mits. |
| Sierra Leone,                           | 20              |                 |
| <b>Tar Salts</b>                        |                 |                 |
| New York,                               | 160 cks.        |                 |
| St. Nazaire,                            | 20 cs.          |                 |
| <b>Cobalt Oxide—</b>                    |                 |                 |
| Hamburg,                                | 2 c.            | £63             |
| Nagasaki,                               | 11 2 q.         | 240             |
| <b>Copperas—</b>                        |                 |                 |
| Santos,                                 | 2 t. 19 c.      | £8              |
| Bayroul,                                | 1 14            | 7               |
| Smyrna,                                 | 5 5             | 10              |
| Sydney,                                 | 3 15            | 11              |
| San Francisco,                          | 13 9 2 q.       | 29              |
| Calcutta,                               | 20 15           | 35              |
| <b>Copper Sulphate—</b>                 |                 |                 |
| Venice,                                 | 26 t. 5 c. 2 q. | £408            |
| Cadiz,                                  | 8 4 3           | 179             |
| Corfu,                                  | 1 1 1           | 18              |
| Palermo,                                | 7 19            | 119             |
| Rouen,                                  | 16 4 3          | 241             |
| Nantes,                                 | 4 18            | 72              |
| Singapore,                              | 5               | 85              |
| Talcahuano,                             | 1 15            | 29              |
| Almeria,                                | 6 18 2          | 111             |
| Tampico,                                | 5 1             | 86              |
| Bari,                                   | 17 5            | 259             |
| Kurrachee,                              | 1 5             | 24              |
| Bombay,                                 | 3 15            | 61              |
| Algiers,                                | 15              | 232             |
| Malta,                                  | 3 1             | 52              |
| Leghorn,                                | 9 18            | 156             |
| Paris,                                  | 38 14 2         | 601             |
| Bordeaux,                               | 48 2 2          | 750             |
| Cette,                                  | 293 4           | 4,751           |
| Naples,                                 | 53              | 810             |
| Marseilles,                             | 135 10 1        | 9,167           |
| <b>Cream of Tartar—</b>                 |                 |                 |
| Ponce,                                  | 1 c.            | £6              |
| Tampico,                                | 6               | 29              |
| <b>Disinfectants—</b>                   |                 |                 |
| Hayre,                                  | 3 c. 2 q.       | £10             |
| Trinidad,                               | 2 cs.           | 5               |
| Bombay,                                 | 17 t. 10        | 130             |
| <b>Dried Blood—</b>                     |                 |                 |
| Rouen,                                  | 8 t. 6 c. 3 q.  | £648            |
| <b>Farina—</b>                          |                 |                 |
| Oporto,                                 | 10 bls.         |                 |
| <b>Gelatine—</b>                        |                 |                 |
| Baltimore,                              | 75 bxs.         |                 |
| Boston,                                 | 300 100 cs.     |                 |
| N. Orleans,                             | 75              |                 |
| New York,                               | 250             |                 |
| Victoria, B.C.,                         | 1               |                 |
| <b>Glue—</b>                            |                 |                 |
| Boston,                                 | 17 cks.         |                 |
| Calcutta,                               | 1               |                 |
| Christiania,                            | 20 tins         |                 |
| Hong Kong,                              | 60              |                 |
| New York,                               | 70 bgs.         |                 |
| Puerto Cabello,                         | 2               |                 |
| Shanghai,                               | 15              |                 |

|                                             |                   |           |
|---------------------------------------------|-------------------|-----------|
| <b>Guano—</b>                               |                   |           |
| Malaga,                                     | 59 t. 8 c.        | £357      |
| <b>Lime—</b>                                |                   |           |
| Sierra Leone,                               | 1 t. 15 c.        | £4        |
| C. C. Castle,                               | 1 10              | 3         |
| Pernambuco,                                 | 8 15              | 18        |
| <b>Litharge—</b>                            |                   |           |
| Vigo,                                       | 1 t.              |           |
| <b>Magnesia—</b>                            |                   |           |
| Alexandria,                                 | 4 cks.            |           |
| Havre,                                      | 80 cs.            |           |
| New York,                                   | 1 1               |           |
| <b>Magnesium Carbonate—</b>                 |                   |           |
| Bilbao,                                     | 50 cs.            |           |
| <b>Magnesium Chloride—</b>                  |                   |           |
| Paris,                                      | 14 t. 19 c.       | £37       |
| Genoa,                                      | 10 brls.          |           |
| <b>Magnesium Sulphate—</b>                  |                   |           |
| Gijon,                                      | 4 cks.            |           |
| Hamburg,                                    | 8 cs.             |           |
| <b>Manure—</b>                              |                   |           |
| Bordeaux,                                   | 347 t. 17 c. 3 q. | £934      |
| Genoa,                                      | 197 1             | 591       |
| Venice,                                     | 325 12 2          | 976       |
| Havre,                                      | 100 2             | 263       |
| <b>Molasses—</b>                            |                   |           |
| Bordeaux,                                   | 50 dms.           |           |
| <b>Ochre—</b>                               |                   |           |
| Lisbon,                                     | 50 brls.          |           |
| <b>Oxalic Acid—</b>                         |                   |           |
| San Francisco,                              | 5 t. 4 c. 2 q.    | £170      |
| Boston,                                     | 3 10              | 140       |
| <b>Paint—</b>                               |                   |           |
| Accra,                                      | 40 kgs.           |           |
| Amsterdam,                                  | 6 5 dms.          |           |
| Antwerp,                                    | 5                 | 7 cks.    |
| Axim,                                       | 45                |           |
| Bangkok,                                    | 6                 |           |
| Barranquilla,                               | 16                |           |
| Be'ze,                                      | 63                |           |
| Bilbao, 2 bxs.                              |                   |           |
| B. Ayres,                                   | 15                |           |
| Cadiz,                                      | 12                |           |
| Caibarien,                                  |                   | 1         |
| Calcutta,                                   | 12                |           |
| Cape Town,                                  | 11                |           |
| Cartagena, N.G.,                            |                   | 1         |
| Cavite,                                     | 22                |           |
| Coronel,                                    |                   | 2         |
| Cuacaco,                                    | 60                |           |
| Dunkirk, 1 cs.                              |                   |           |
| Genoa, 13 brls.                             |                   | 5 6       |
| Guayaquil,                                  |                   | 1         |
| Havana,                                     |                   | 6         |
| Hong Kong,                                  | 40                |           |
| Jaffa,                                      |                   | 3         |
| La Libertad, 15 cs.                         |                   |           |
| Larnaca,                                    |                   | 2         |
| Maceio,                                     | 20                |           |
| Malta,                                      |                   | 1         |
| Manilla, 10 brls.                           |                   |           |
| Maranham, 34                                |                   |           |
| M. Video, 20 cs.                            |                   |           |
| New York, 2 4                               |                   | 3         |
| Oporto, 2                                   |                   |           |
| Para,                                       |                   | 32        |
| Pernambuco, 20                              | 20 brls.          |           |
| Philadelphia, 4 cs.                         |                   |           |
| Piraeus,                                    |                   | 3         |
| Ponce,                                      |                   | 6         |
| Pt. Natal, 397                              |                   | 49        |
| Rio de Janeiro,                             |                   | 12        |
| Rotterdam, 2 cs.                            |                   |           |
| St. John's, Nfld.,                          |                   | 1         |
| S. Domingo, 25 cs. 4                        |                   |           |
| Salaora, 2 pkgs.                            |                   |           |
| San Juan, 14 cs. 200                        |                   |           |
| San Sebastian,                              |                   | 4 dms.    |
| Santa Catherina,                            |                   | 10 cs.    |
| Santos,                                     |                   | 34        |
| Seville,                                    |                   | 1         |
| Sherbro,                                    | 60                |           |
| Sierra Leone,                               |                   | 30 dms. 4 |
| Smyrna,                                     | 530               |           |
| Talcahuano,                                 |                   | 29        |
| Tampico, 12 cs.                             |                   |           |
| Trinidad, 6                                 |                   |           |
| Valparaiso, 20 362 124                      |                   |           |
| Vera Cruz,                                  | 7 brls.           | 30        |
| <b>Painters' Colours—</b>                   |                   |           |
| Alexandria, 4 tins 10 dms. 200 brls. 2 bxs. |                   |           |
| Appam,                                      | 1 brl.            |           |
| Baltimore,                                  | 208 cks. 70 kgs.  |           |
| Barcelona,                                  | 5                 |           |
| Belier, 1 cs. 2 15                          |                   |           |
| Bombay, 202 75 dms. 3,421 kgs. 30 brls.     |                   |           |
| Boston,                                     | 80 brls.          |           |



|                    |         |     |         |
|--------------------|---------|-----|---------|
| B. Ayres, 20       | 27 dms. | 10  | 42 cks. |
| Calcutta, 1        |         | 360 | 3       |
| Cartagena, S.A., 3 | brls.   |     |         |
| Ceara, 282         |         | 11  |         |
| Chittagong, 2      | cs.     |     | 58      |
| Gijon, 4           |         |     | 4       |
| Hambourg, 5        | dms.    | 10  |         |
| Iquitos, 160       |         |     |         |
| Lisbon, 7          | brls.   | 10  |         |
| Macao, 1           |         |     | 8       |
| Manilla, 410       |         |     | 30      |
| Mauritius, 10      |         |     | 10      |
| Melbourne, 11      |         |     |         |
| M. Video, 11       |         |     |         |
| Rangoon, 1         |         |     |         |

**Paraffin Wax—**

|                   |      |  |
|-------------------|------|--|
| Para, 10          | cs.  |  |
| Pernambuco, 56    | dms. |  |
| Rio de Janeiro, 6 |      |  |
| Smyrna, 16        | bgs. |  |

**Phosphorus—**

|               |    |      |        |
|---------------|----|------|--------|
| Hiogo, 5      | t. | 5 c. | £1,190 |
| Vera Cruz, 17 |    |      | 187    |

**Plumbago—**

|          |    |  |  |
|----------|----|--|--|
| Vigo, 15 | c. |  |  |
|----------|----|--|--|

**Potassium Bichromate—**

|            |    |     |  |
|------------|----|-----|--|
| Randers, 7 | c. | £15 |  |
|------------|----|-----|--|

**Potassium Carbonate—**

|             |    |      |  |
|-------------|----|------|--|
| New York, 7 | t. | £120 |  |
|-------------|----|------|--|

**Potassium Chlorate—**

|                   |     |      |  |
|-------------------|-----|------|--|
| Bombay, 10        | cs. | £30  |  |
| Rio de Janeiro, 3 | t.  | 118  |  |
| Antwerp, 2        |     | 90   |  |
| Philadelphia, 5   |     | 200  |  |
| Venice, 1         |     | 39   |  |
| E. London, 10     | c.  | 18   |  |
| Vera Cruz, 3      |     | 120  |  |
| Genoa, 50         | 19  | 775  |  |
| Rouen, 1          | 1   | 3 q. |  |
| Hiogo, 5          |     | 196  |  |
| Boston, 8         | 15  | 333  |  |
| New York, 21      |     | 779  |  |

**Potassium Cyanide—**

|            |    |      |     |
|------------|----|------|-----|
| Curacao, 2 | c. | 3 q. | £83 |
|------------|----|------|-----|

**Potassium Prussiate—**

|           |    |      |     |
|-----------|----|------|-----|
| Rouen, 11 | c. | 1 q. | £38 |
|-----------|----|------|-----|

**Potassium Sulphate—**

|             |    |      |           |
|-------------|----|------|-----------|
| New York, 6 | t. | 9 c. | 3 q. £105 |
|-------------|----|------|-----------|

**Salt—**

|                      |      |  |  |
|----------------------|------|--|--|
| Accra, 8             | t.   |  |  |
| Adelaide, 1          | 2 c. |  |  |
| Antofagasta, 60      |      |  |  |
| Antwerp, 82          |      |  |  |
| Axim, 10             |      |  |  |
| Baltimore, 195       |      |  |  |
| Barbadoes, 75        |      |  |  |
| Bayin, 7             |      |  |  |
| Boston, 220          |      |  |  |
| Brunswick, 800       |      |  |  |
| B. Ayres, 70         |      |  |  |
| Calcutta, 4,807      | 1    |  |  |
| Cameroons, 17        | 17   |  |  |
| Cape Lahou, 8        | 10   |  |  |
| Cape Town, 50        |      |  |  |
| Christiania, 15      |      |  |  |
| Copenhagen, 300      |      |  |  |
| Coquimbo, 2          | 7    |  |  |
| Dakar, 5             |      |  |  |
| Faroe Islands, 155   |      |  |  |
| Ghent, 200           |      |  |  |
| Gibraltar, 1         | 17   |  |  |
| Gd. Bassa, 7         | 10   |  |  |
| Halifax, 16          | 14   |  |  |
| Isles de Los, 35     |      |  |  |
| Lagos, 100           |      |  |  |
| Loango, 18           |      |  |  |
| Manaos, 7            | 3    |  |  |
| Manub, 30            |      |  |  |
| Melbourne, 100       |      |  |  |
| M. Video, 17         | 7    |  |  |
| N. Orleans, 200      |      |  |  |
| New York, 60         |      |  |  |
| Noqui, 14            |      |  |  |
| Oporto, 1            |      |  |  |
| Para, 108            |      |  |  |
| Portland, Me., 300   |      |  |  |
| Pt. Natal, 200       |      |  |  |
| Rangoon, 1,099       |      |  |  |
| Rio de Janeiro, 30   | cks. |  |  |
| Rosario, 7           |      |  |  |
| Rouen, 15            |      |  |  |
| S. John's, N.B., 141 |      |  |  |
| S. John's, N'd., 253 |      |  |  |
| Salt Pond, 21        | 7    |  |  |
| Santa Catherina, 16  | 10   |  |  |
| Shanghai, 10         | 10   |  |  |
| Sierra Leone, 150    |      |  |  |
| Sulymah, 25          |      |  |  |
| Trinidad, 78         | 6    |  |  |
| Winnebuh, 2          | 10   |  |  |

|                    |    |      |     |
|--------------------|----|------|-----|
| <b>Saltpetre—</b>  |    |      |     |
| Tampico, 1         | t. | 7 c. | £41 |
| Cartagena, N.G., 2 | 18 |      | 71  |

**Sheep Dip—**

|              |    |      |      |
|--------------|----|------|------|
| Algoa Bay, 7 | t. | 4 c. | £307 |
| Cape Town, 5 |    |      | 190  |
| B. Ayres, 26 | 7  |      | 647  |
| Pt. Natal, 2 | 10 |      | 98   |

**Soap—**

|                  |      |        |  |
|------------------|------|--------|--|
| Alexandria, 30   | bxs. | 50 cs. |  |
| Algoa Bay, 8,980 |      |        |  |
| Amsterdam, 250   |      |        |  |
| Antwerp, 130     |      |        |  |
| Appam, 50        |      |        |  |
| Barbadoes, 800   |      |        |  |
| Bayin, 24        |      |        |  |
| Belize, 100      |      |        |  |
| Bermuda, 50      |      |        |  |
| Bombay, 810      | 41   |        |  |

|                     |       |  |  |
|---------------------|-------|--|--|
| Bordeaux, 630       | bcls. |  |  |
| Boston, 10          | brls. |  |  |
| B. Ayres, 58        |       |  |  |
| Calcutta, 244       |       |  |  |
| Canaria, 630        |       |  |  |
| C. C. Castle, 1     |       |  |  |
| Cape Town, 4,910    | 255   |  |  |
| Chama, 100          |       |  |  |
| Champerico, 112     |       |  |  |
| Christiania, 80     |       |  |  |
| Constantinople, 300 | 20    |  |  |

|                     |       |      |  |
|---------------------|-------|------|--|
| Corfu, 4            |       |      |  |
| Corinto, 2          |       |      |  |
| Curacao, 732        | 1     |      |  |
| Delagoa Bay, 1,006  | 5     |      |  |
| Demerara, 1,295     |       |      |  |
| Durban, 1,830       |       |      |  |
| E. London, 671      | 60    |      |  |
| Genoa, 135          |       |      |  |
| Gd. Bassam, 100     |       |      |  |
| Guayaquil, 150      |       |      |  |
| Half-Jack, 100      |       |      |  |
| Halifax, 25         |       |      |  |
| Hamburg, 174        |       |      |  |
| Havre, 450          | 780   |      |  |
| Hong Kong, 500      | 12    |      |  |
| Iloilo, 2           |       |      |  |
| Iquitos, 100        |       |      |  |
| Kurrachee, 500      | 42    |      |  |
| Lagos, 50           |       |      |  |
| Las Palmas, 117     |       |      |  |
| Lisbon, 5           | 10    |      |  |
| Lucca, 75           |       |      |  |
| Macassar, 500       |       |      |  |
| Madras, 10          |       |      |  |
| Malta, 50           |       |      |  |
| Manaos, 550         |       |      |  |
| Manila, 2           |       |      |  |
| Mauritius, 2,000    |       |      |  |
| Melilla, 30         |       |      |  |
| Monrovia, 90        |       |      |  |
| M. Video, 2         |       |      |  |
| Montserrat, 106     |       |      |  |
| Mossel Bay, 710     |       |      |  |
| Natal, 100          |       |      |  |
| New York, 325       |       |      |  |
| Old Calabar, 1,300  |       |      |  |
| Opobo, 5,000        |       |      |  |
| Para, 200           |       |      |  |
| Penang, 250         |       |      |  |
| Piraeus, 79         |       |      |  |
| Pt. Elizabeth, 550  | 50    |      |  |
| Portland, M., 2     |       |      |  |
| Pt. Natal, 455      | 4     |      |  |
| Pt. Said, 10        |       |      |  |
| Rangoon, 860        | 20    | dms. |  |
| Rouen, 11           |       |      |  |
| St. John's, N.B., 6 |       |      |  |
| Nfld. 20            |       |      |  |
| St. Lucia, 82       |       |      |  |
| St. Thomas, 355     |       |      |  |
| Salt Pond, 25       |       |      |  |
| San Jose, 1         |       |      |  |
| San Juan, 100       |       |      |  |
| Savannah, 6         |       |      |  |
| Shanghai, 11,189    | 46    |      |  |
| Sierra Leone, 120   |       |      |  |
| Singapore, 2,815    | 15    |      |  |
| Teneriffe, 200      | 1,107 |      |  |
| Tientsin, 46        |       |      |  |
| Trinidad, 500       | 1     |      |  |
| Valparaiso, 10      |       |      |  |
| Warri, 200          |       |      |  |

|                     |       |      |  |
|---------------------|-------|------|--|
| Corfu, 4            |       |      |  |
| Corinto, 2          |       |      |  |
| Curacao, 732        | 1     |      |  |
| Delagoa Bay, 1,006  | 5     |      |  |
| Demerara, 1,295     |       |      |  |
| Durban, 1,830       |       |      |  |
| E. London, 671      | 60    |      |  |
| Genoa, 135          |       |      |  |
| Gd. Bassam, 100     |       |      |  |
| Guayaquil, 150      |       |      |  |
| Half-Jack, 100      |       |      |  |
| Halifax, 25         |       |      |  |
| Hamburg, 174        |       |      |  |
| Havre, 450          | 780   |      |  |
| Hong Kong, 500      | 12    |      |  |
| Iloilo, 2           |       |      |  |
| Iquitos, 100        |       |      |  |
| Kurrachee, 500      | 42    |      |  |
| Lagos, 50           |       |      |  |
| Las Palmas, 117     |       |      |  |
| Lisbon, 5           | 10    |      |  |
| Lucca, 75           |       |      |  |
| Macassar, 500       |       |      |  |
| Madras, 10          |       |      |  |
| Malta, 50           |       |      |  |
| Manaos, 550         |       |      |  |
| Manila, 2           |       |      |  |
| Mauritius, 2,000    |       |      |  |
| Melilla, 30         |       |      |  |
| Monrovia, 90        |       |      |  |
| M. Video, 2         |       |      |  |
| Montserrat, 106     |       |      |  |
| Mossel Bay, 710     |       |      |  |
| Natal, 100          |       |      |  |
| New York, 325       |       |      |  |
| Old Calabar, 1,300  |       |      |  |
| Opobo, 5,000        |       |      |  |
| Para, 200           |       |      |  |
| Penang, 250         |       |      |  |
| Piraeus, 79         |       |      |  |
| Pt. Elizabeth, 550  | 50    |      |  |
| Portland, M., 2     |       |      |  |
| Pt. Natal, 455      | 4     |      |  |
| Pt. Said, 10        |       |      |  |
| Rangoon, 860        | 20    | dms. |  |
| Rouen, 11           |       |      |  |
| St. John's, N.B., 6 |       |      |  |
| Nfld. 20            |       |      |  |
| St. Lucia, 82       |       |      |  |
| St. Thomas, 355     |       |      |  |
| Salt Pond, 25       |       |      |  |
| San Jose, 1         |       |      |  |
| San Juan, 100       |       |      |  |
| Savannah, 6         |       |      |  |
| Shanghai, 11,189    | 46    |      |  |
| Sierra Leone, 120   |       |      |  |
| Singapore, 2,815    | 15    |      |  |
| Teneriffe, 200      | 1,107 |      |  |
| Tientsin, 46        |       |      |  |
| Trinidad, 500       | 1     |      |  |
| Valparaiso, 10      |       |      |  |
| Warri, 200          |       |      |  |

**Soda—**

|            |      |  |  |
|------------|------|--|--|
| Boston, 15 | cks. |  |  |
|------------|------|--|--|

**Soda Alkali—**

|                   |       |  |  |
|-------------------|-------|--|--|
| Barcelona, 70     | brls. |  |  |
| Catania, 17       |       |  |  |
| Genoa, 100        |       |  |  |
| Leghorn, 35       |       |  |  |
| Mauritius, 17     |       |  |  |
| San Sebastian, 60 |       |  |  |

**Soda Ash—**

|                  |       |     |      |
|------------------|-------|-----|------|
| Adelaide, 537    | cks.  |     |      |
| Algoa Bay, 24    |       |     |      |
| Antwerp, 660     | bgs.  |     |      |
| Baltimore, 6,174 | 73    | 319 | tes. |
| Barcelona, 20    |       |     |      |
| Batavia, 60      | brls. |     |      |

|               |       |     |  |
|---------------|-------|-----|--|
| Bombay, 30    |       |     |  |
| Boston, 4,350 | 310   | 363 |  |
| Brisbane, 473 |       |     |  |
| B. Ayres, 150 | brls. |     |  |
| Calcutta, 135 | 56    |     |  |
| Callao, 30    | 70    |     |  |

|                     |       |     |      |
|---------------------|-------|-----|------|
| Catania, 20         |       |     |      |
| Constantinople, 100 |       |     |      |
| Copenhagen, 214     |       |     |      |
| Corfu, 100          |       |     |      |
| Genoa, 200          |       |     |      |
| Ghent, 200          |       |     |      |
| Halifax, 8          |       |     |      |
| Hamburg, 100        | 10    |     |      |
| Hamilton, On., 100  |       |     |      |
| Kurrachee, 38       |       |     |      |
| Leghorn, 100        | 100   |     |      |
| Lisbon, 21          |       |     |      |
| Naples, 150         | 15    |     |      |
| Nauplia, 15         |       |     |      |
| New York, 2,770     | 43    | 243 | tes. |
| Oporto, 23          |       |     |      |
| Patras, 10          | brls. |     |      |
| Philadelphia, 3,502 | 207   | 351 | tes. |
| Piraeus, 22         | brls. |     |      |
| Rio de Janeiro, 295 |       |     |      |
| Rotterdam, 1,500    |       |     |      |
| Salonica, 80        |       |     |      |
| Sourabaya, 75       |       |     |      |
| Sydney, 301         |       |     |      |
| Tampico, 19         |       |     |      |

**Soda Crystals—**

|                    |      |     |                |
|--------------------|------|-----|----------------|
| Algoa Bay, 50      | kgs. |     |                |
| Boston, 190        | bgs. | 196 | cks. 280 brls. |
| Iquitos, 100       |      |     |                |
| Malta, 110         |      |     |                |
| Natal, S. Am., 120 |      |     |                |
| New York, 140      |      |     |                |
| Oporto, 19         |      |     |                |
| Philadelphia, 392  |      |     |                |
| Singapore, 4       |      |     |                |
| Sydney, 67         |      |     |                |
| Tangiers, 10       |      |     |                |
| Trinidad, 14       |      |     |                |
| Truro, 10          |      |     |                |

**Sodium Bicarbonate**

|                |          |         |           |
|----------------|----------|---------|-----------|
| Algoa Bay,     | 50 kgs.  |         |           |
| Boston,        | 190 bgs. | 796 cks | 280 brls. |
| Iquique,       |          |         | 100       |
| Malta,         |          | 110     |           |
| Natal, S. Am., | 120      |         |           |
| New York,      |          | 140     |           |
| Oporto,        |          |         | 18        |
| Philadelphia,  |          |         | 392       |
| Singapore,     |          | 4       |           |
| Sydney,        | 67       |         |           |
| Tangiers,      |          | 10      |           |
| Trinidad,      |          |         | 14        |
| Truro,         | 10       |         |           |



|                           |          |
|---------------------------|----------|
| <b>Extracts—</b>          |          |
| Rouen,                    | 4 cks.   |
| <b>Glue—</b>              |          |
| Rotterdam,                | 2 cks.   |
| <b>Linseed Oil—</b>       |          |
| Bussorah,                 | 25 dms.  |
| <b>Manure—</b>            |          |
| Treport,                  | 274 bgs. |
| <b>Painters' Colours—</b> |          |
| Bussorah,                 | 25 dms.  |
| <b>Paraffin Wax—</b>      |          |
| Hamburg,                  | 88 bgs.  |
| <b>Pitch—</b>             |          |
| Treport,                  | 50 t.    |
| <b>Starch—</b>            |          |
| Bussorah,                 | 2 cs.    |
| <b>Tar Oil—</b>           |          |
| Treport,                  | 28 cks.  |
| Hamburg,                  | 20 dms.  |

**HULL.**

Week ending January 18th.

|                                      |                   |
|--------------------------------------|-------------------|
| <b>Alkali—</b>                       |                   |
| Bremen,                              | 120 bgs.          |
| Naples,                              | 38 cks.           |
| <b>Ammonium Sulphate—</b>            |                   |
| Antwerp,                             | 472 bgs.          |
| Dunkirk,                             | 86                |
| Hamburg,                             | 200               |
| Leghorn,                             | 275               |
| Rotterdam,                           | 391               |
| Rouen,                               | 200               |
| <b>Carbolic Acid—</b>                |                   |
| Rotterdam,                           | 48 brls.          |
| <b>Caustic Soda—</b>                 |                   |
| Danzig,                              | 8 dms.            |
| Hango,                               | 3 cks.            |
| <b>Chemicals (otherwise under.)—</b> |                   |
| Amsterdam,                           | 20 cks. 135 pkgs. |
| Antwerp,                             | 1                 |
| Bergen,                              | 1                 |
| Christiania,                         | 32 pks. 879 slbs. |
| Copenhagen,                          | 10 cks.           |
| Danzig,                              | 6 cs. 40 pkgs.    |
| Drontheim,                           | 343 slbs.         |
| Genoa,                               | 8 59              |
| Hamburg,                             | 110 10 pks.       |
| Harlingen,                           | 1                 |
| Konigsberg,                          | 1                 |
| Lisbon,                              | 50 pkgs.          |
| Naples,                              | 4 7               |
| Reval,                               | 20                |
| Rotterdam,                           | 38 50             |
| Stettin,                             | 6                 |
| <b>China Clay—</b>                   |                   |
| Bergen,                              | 30 bgs.           |
| <b>Cottonseed Oil—</b>               |                   |
| Amsterdam,                           | 667 c.            |
| Antwerp,                             | 1,737             |
| Leghorn,                             | 105               |
| Rotterdam,                           | 1,539             |
| Rouen,                               | 7                 |
| <b>Dyestuffs (otherwise under.)—</b> |                   |
| Hango,                               | 10 cks. 2 kgs.    |
| Lisbon,                              | 3                 |
| Reval,                               | 1 cs.             |
| <b>Linseed Oil—</b>                  |                   |
| Amsterdam,                           | 194 c.            |
| Bremen,                              | 7                 |
| Christiania,                         | 27                |
| Drontheim,                           | 98                |
| Hamburg,                             | 283               |
| Stavanger,                           | 69                |
| <b>Mineral White—</b>                |                   |
| Harlingen,                           | 200 bgs.          |
| <b>Painters' Colours—</b>            |                   |
| Amsterdam,                           | 2 cks.            |
| Antwerp,                             | 10 1 cs. 2 pkgs.  |
| Bergen,                              | 11                |
| Bremen,                              | 2                 |
| Copenhagen,                          | 14 1              |
| Danzig,                              | 25                |
| Drontheim,                           | 10                |
| Dunkirk,                             | 1                 |
| Gothenburg,                          | 5 2 dms.          |
| Genoa,                               | 9 1               |
| Hamburg,                             | 2                 |
| Harlingen,                           | 3                 |
| Marseilles,                          | 4                 |
| New York,                            | 78 100 cs.        |
| Naples,                              | 1 2               |
| Rotterdam,                           | 6 1               |
| Rouen,                               | 12                |
| <b>Paraffin Wax—</b>                 |                   |
| Danzig,                              | 20 bgs.           |
| <b>Pitch—</b>                        |                   |
| Dunkirk,                             | 90 t.             |
| Leghorn,                             | 88                |
| Reval,                               | 1 ck.             |

|                 |              |
|-----------------|--------------|
| <b>Soap—</b>    |              |
| Amsterdam,      | 44 cs.       |
| Drontheim,      | 50           |
| <b>Tallow—</b>  |              |
| Amsterdam,      | 100 cks.     |
| <b>Tar—</b>     |              |
| Amsterdam,      | 20 cks.      |
| Copenhagen,     | 10           |
| Genoa,          | 6            |
| <b>Treacle—</b> |              |
| Drontheim,      | 25 brls.     |
| <b>Varnish—</b> |              |
| Antwerp,        | 3 cks. 1 cs. |
| Copenhagen,     | 2            |
| Harlingen,      | 8 1          |
| Naples,         | 1            |
| Reval,          | 1            |

**GLASGOW.**

Week ending January 23rd.

|                                              |              |
|----------------------------------------------|--------------|
| <b>Acetic Acid—</b>                          |              |
| Bombay,                                      | £70          |
| <b>Albumen—</b>                              |              |
| U.S.A.,                                      | £42          |
| <b>Ammonia—</b>                              |              |
| Manila,                                      | 1 t. 18½ c.  |
| <b>Ammonium Sulphate—</b>                    |              |
| U.S.A.,                                      | 133 t. 6½ c. |
| Rocheport,                                   | 15           |
| Kingston,                                    | 14 2         |
| Philadelphia,                                | 12 10½       |
| <b>Bleaching Powder—</b>                     |              |
| Sydney,                                      | 5 t. 18 c.   |
| U.S.A.,                                      | 7 2½         |
| <b>Calcium Chloride—</b>                     |              |
| Sydney,                                      | 20 t. 3½ c.  |
| <b>Chrome Ore—</b>                           |              |
| U.S.A.,                                      | 500 t.       |
| <b>Coal Products—</b>                        |              |
| <b>Creosote Oil</b>                          |              |
| U.S.A.,                                      | £67          |
| Vera Cruz,                                   | 205          |
| <b>Naphtha</b>                               |              |
| Antwerp,                                     | 63 t.        |
| <b>Pitch</b>                                 |              |
| Oporto,                                      | £389         |
| Genoa,                                       | 800          |
| U.S.A.,                                      | 40           |
| Rocheport,                                   | 200 t.       |
| Amsterdam,                                   | 254          |
| Antwerp,                                     | 650          |
| Hamburg,                                     | 11 5 c.      |
| Bombay,                                      | 23           |
| Calcutta,                                    | 43           |
| <b>Tar</b>                                   |              |
| Bombay,                                      | £279         |
| Calcutta,                                    | 50           |
| Karachi,                                     | 96           |
| <b>Coal Tar Products (otherwise under.)—</b> |              |
| Rotterdam,                                   | 20 t.        |
| <b>Copperas—</b>                             |              |
| Bombay,                                      | £70          |
| Karachi,                                     | 45           |
| <b>Cresylic Acid—</b>                        |              |
| New York,                                    | £20          |
| <b>Dyestuffs—</b>                            |              |
| <b>Extracts</b>                              |              |
| Lisbon,                                      | £27          |
| Christiania,                                 | 9            |
| <b>Logwood</b>                               |              |
| Oporto,                                      | £85          |
| <b>Dyestuffs (otherwise under.)—</b>         |              |
| Lisbon,                                      | £310         |
| <b>Gelatine—</b>                             |              |
| U.S.A.,                                      | £210         |
| <b>Glucose—</b>                              |              |
| U.S.A.,                                      | 4 t. 5 c.    |
| Cape Town,                                   | 12 10        |
| <b>Lead Nitrate—</b>                         |              |
| Genoa,                                       | 3 t. 5½ c.   |
| Paris,                                       | £150         |
| <b>Linseed Oil—</b>                          |              |
| Huelva,                                      | 1 t. ½ c.    |
| Manila,                                      | 2 8          |
| Philippine Is.,                              | 2 10         |
| Sydney,                                      | 1            |
| <b>Manganese—</b>                            |              |
| Antwerp,                                     | 5 t. 12½ c.  |
| <b>Manganese Oxide—</b>                      |              |
| U.S.A.,                                      | 19 t. 17 c.  |
| <b>Manure—</b>                               |              |
| Kingston,                                    | £179         |
| Nantes,                                      | 15 t.        |
| <b>Paint—</b>                                |              |
| Manila,                                      | £317         |
| Kingston,                                    | 28           |

|                              |             |
|------------------------------|-------------|
| <b>Painters' Colours—</b>    |             |
| Iloilo,                      | £77         |
| Bergen,                      | 25          |
| Bombay,                      | 45          |
| Colombo,                     | 53          |
| Karachi,                     | 40          |
| Sydney,                      | 689         |
| <b>Paraffin Wax—</b>         |             |
| Lisbon,                      | £21         |
| Christiania,                 | 4 t. 5 c.   |
| Paris,                       | 35          |
| Algoa Bay,                   | 25          |
| <b>Potash Salts—</b>         |             |
| Mexico City,                 | 15,288 lbs. |
| <b>Potassium Bichromate—</b> |             |
| Antwerp,                     | £598        |
| Ghent,                       | 84          |
| Genoa,                       | 528         |
| Reims,                       | 206         |
| Rouen,                       | 559         |
| U.S.A.,                      | 738         |

|                           |              |
|---------------------------|--------------|
| <b>Rosin Oil—</b>         |              |
| Rotterdam,                | £40          |
| <b>Sal ammoniac—</b>      |              |
| Genoa,                    | £65          |
| <b>Soap—</b>              |              |
| U.S.A.,                   | 1 t.         |
| Bombay,                   | 4 14½ c.     |
| Caracas,                  | 1 14½        |
| E. London,                | 2 10         |
| Grenada,                  | 1 6½         |
| <b>Sodium Bichromate—</b> |              |
| Antwerp,                  | 10 t. 1 c.   |
| Ghent,                    | 2 19½        |
| Genoa,                    | 11 ¼         |
| Rouen,                    | 16 6½        |
| <b>Starch—</b>            |              |
| Lisbon,                   | £116         |
| <b>Sulphuric Acid—</b>    |              |
| Philippine Is.,           | £24          |
| Bombay,                   | 1,050        |
| <b>Tallow—</b>            |              |
| Antwerp,                  | 22 t. 13½ c. |
| Lisbon,                   | 21 15½       |
| <b>Treacle—</b>           |              |
| Berne,                    | £43          |
| Bergen,                   | 26 t. 12 c.  |
| Christiania,              | 5 2          |
| Drontheim,                | 11 5         |
| <b>Turpentine—</b>        |              |
| Manila,                   | £85          |
| Philippine Is.,           | 55           |
| <b>White Lead—</b>        |              |
| Durban,                   | £21          |
| E. London,                | 56           |
| Pt. Elizabeth,            | 40           |

**TYNE.**

Week ending January 18th.

|                            |              |
|----------------------------|--------------|
| <b>Alkali—</b>             |              |
| Amsterdam,                 | 15 t. 17 c.  |
| Rotterdam,                 | 5 4          |
| Bergen,                    | 2 17         |
| <b>Ammonium Carbonate—</b> |              |
| Barcelona,                 | 2 t.         |
| <b>Ammonium Chloride—</b>  |              |
| Gothenburg,                | 15 c.        |
| Barcelona,                 | 5 t. 10      |
| <b>Ammonium Sulphate—</b>  |              |
| Hamburg,                   | 50 t. 10 c.  |
| <b>Antimony—</b>           |              |
| New York,                  | 30 t.        |
| Rotterdam,                 | 5            |
| Barcelona,                 | 1            |
| Antwerp,                   | 1            |
| Copenhagen,                | 6 c.         |
| <b>Arsenic—</b>            |              |
| Barcelona,                 | 2 t. 13 c.   |
| <b>Asbestos—</b>           |              |
| Copenhagen,                | 1 q.         |
| <b>Barium—</b>             |              |
| New York,                  | 23 t. 4 c.   |
| Rotterdam,                 | 1            |
| <b>Barytes—</b>            |              |
| New York,                  | 174 t. 14 c. |
| Rouen,                     | 50           |
| <b>Bleaching Powder—</b>   |              |
| Antwerp,                   | 36 t. 4 c.   |
| Amsterdam,                 | 24 6         |
| Rotterdam,                 | 11 17        |
| Lisbon,                    | 10 3         |
| Rouen,                     | 7 1          |
| Copenhagen,                | 5            |
| Trondhjem,                 | 7 7          |
| Gothenburg,                | 65 10        |

|                          |            |
|--------------------------|------------|
| <b>Caustic Soda—</b>     |            |
| Antwerp,                 | 7 t. 18 c. |
| Amsterdam,               | 3 19       |
| New York,                | 72 10      |
| Rotterdam,               | 1 10       |
| Barcelona,               | 67 10      |
| <b>Chloride of Lime—</b> |            |
| New York,                | 100 t.     |
| <b>Colours—</b>          |            |
| New York,                | 1 t.       |
| <b>Litharge—</b>         |            |
| Rotterdam,               | 10 c.      |
| <b>Magnesia—</b>         |            |
| New York,                | 1 t. 11 c. |
| Bilbao,                  | 50         |
| Barcelona,               | 15         |
| <b>Manure—</b>           |            |
| Gandia,                  | 100 t.     |
| <b>Oxalic Acid—</b>      |            |
| Barcelona,               | 5 t. 2 c.  |
| <b>Paint—</b>            |            |
| Hamburg,                 | 1 t. 8 c.  |
| Antwerp,                 | 8          |
| New York,                | 12         |

|                             |            |
|-----------------------------|------------|
| <b>Soap—</b>                |            |
| Arendal,                    | 1 c.       |
| New York,                   | 0 t. 2     |
| <b>Soda—</b>                |            |
| Esbjerg,                    | 75 t. 2 c. |
| Amsterdam,                  | 10         |
| Christiania,                | 5          |
| Stavanger,                  | 4 19       |
| New York,                   | 162 2      |
| Randers,                    | 58         |
| Rotterdam,                  | 53 7       |
| Bergen,                     | 3 4        |
| <b>Sodium Hyposulphite—</b> |            |
| New York,                   | 10 t. 2 c. |
| <b>Sodium Silicate—</b>     |            |
| Hamburg,                    | 3 t. 14 c. |
| <b>Sodium Sulphate—</b>     |            |
| Antwerp,                    | 50 t. 2 c. |
| <b>Sulphur—</b>             |            |
| Antwerp,                    | 6 t. 1 c.  |
| Christiania,                | 70         |
| Gothenburg,                 | 20         |
| <b>White Lead—</b>          |            |
| Copenhagen,                 | 2 t. 17 c. |

**GOOLE.**

Week ending January 15th.

|                                          |               |
|------------------------------------------|---------------|
| <b>Chemicals (otherwise under.)—</b>     |               |
| Antwerp,                                 | 2 cks.        |
| Ghent,                                   | 1 1 cs.       |
| Rotterdam,                               | 2             |
| <b>Coal Products (otherwise under.)—</b> |               |
| Antwerp,                                 | 2 cks.        |
| Boulogne,                                | 2 2 cs.       |
| Rouen,                                   | 1             |
| Rotterdam,                               | 85            |
| <b>Colours—</b>                          |               |
| Boulogne,                                | 3 cs.         |
| Ghent,                                   | 1 ck. 2       |
| Hamburg,                                 | 1             |
| <b>Dyestuffs (otherwise under.)—</b>     |               |
| Hamburg,                                 | 1 ck. 96 bgs. |
| Rouen,                                   | 2 1 cs.       |
| <b>Manure—</b>                           |               |
| Boulogne,                                | 7 bgs.        |
| Bruges,                                  | 500           |
| Dunkirk,                                 | 41            |
| Ghent,                                   | 90            |
| <b>Pitch—</b>                            |               |
| Dunkirk,                                 | 220 t.        |
| Antwerp,                                 | 444           |

**GRIMSBY.**

Week ending January 18th.

|                                          |         |
|------------------------------------------|---------|
| <b>Alkali—</b>                           |         |
| Hamburg,                                 | 20 cs.  |
| <b>Coal Products (otherwise under.)—</b> |         |
| Antwerp,                                 | 3 cks.  |
| Dieppe,                                  | 140     |
| Hamburg,                                 | 4 pkgs. |
| <b>Colours—</b>                          |         |
| Antwerp,                                 | 2 cs.   |
| <b>Dyestuffs (otherwise under.)—</b>     |         |
| Dieppe,                                  | 2 cks.  |
| <b>Pitch—</b>                            |         |
| Antwerp,                                 | 60 t.   |
| <b>Soap—</b>                             |         |
| Dieppe,                                  | 8 cs.   |







# THE CHEMICAL TRADE JOURNAL AND OIL, PAINT and COLOUR REVIEW.

Publishing Offices: 32, BLACKFRIARS STREET, MANCHESTER.

No. 455.

SATURDAY, FEBRUARY 8, 1896.

Vol. XVIII.

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SUBSCRIBERS ARE REQUESTED TO NOTE THAT THE

## INDEX and TITLE PAGE for VOL. XVII.

WILL BE ISSUED WITH NO. 457, FEBRUARY 22, 1896.

## Notices.

All communications for the *Chemical Trade Journal* should be addressed, and Cheques and Post Office Orders made payable to—

**DAVIS BROS., 32, Blackfriars Street, MANCHESTER.**

Our Registered Telegraphic Address is—

**"Expert, Manchester."**

**NATIONAL TELEPHONE 3060.**

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Articles, reports, and correspondence on all matters of interest to the Chemical and allied industries, home and foreign, are solicited. Correspondents should condense their matter as much as possible, write on one side only of the paper, and in all cases give their names and addresses, not necessarily for publication. Sketches should be sent on separate sheets.

## Advertisements.

Prepaid Advertisements of Situations Vacant, Premises on Sale or To be Let, Miscellaneous Wants, and Specific Articles for Sale by Private Contract are inserted in the *Chemical Trade Journal* at the following rates:—

10 Words and under .....

Each additional 10 words .....

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10 Words and under .....

Each additional 10 words .....

Trade Advertisements, Announcements in the Directory Columns, and all Advertisements not prepaid, are charged at the Tariff rates, which will be forwarded on application.

Advertisements intended for insertion in the current week's issue should reach the office by Thursday morning at the latest.

## CURRENT TOPICS.

### THE AMERICAN CHEMICAL TRADE.

THERE have been a good many changes in the past year in the chemical trade in this country, changes that have mainly been due to the advances that the Solvay Process has been making, and it would seem the American branch at Syracuse has not been standing still either.

As far back as 1893 the company determined to increase their output, which meant enlarging their works. Owing to various reasons, one of which was the great depression that prevailed during that year and 1894, the proposed changes progressed but slowly. The alterations have now, however, been completed, and the increased plant brings the total capacity of the works up to 500 tons of soda ash per day. To supply the raw materials necessary for this increased production other developments have been called for, so that the company have bored additional wells for the supply of brine, and have enlarged their coke-oven plant to a capacity of 120 tons of coke per day. In conjunction with these alterations the office buildings have been extended and a handsome laboratory, fitted inside on the latest and most approved principles, has been erected.

Another enterprising move has been the acquisition of the Onondaga blast furnaces, and now on the adjacent land the company are erecting a gas producer plant capable of carbonizing 1,000 tons of coal a day, the gas being employed as fuel throughout the works.

Apart from these by no means insignificant developments, another far more extensive departure was begun last year. Owing to the rapidly increasing demands of the chemical trade in the West, this company decided to take time by the forelock and prepare themselves to provide for the needs that are being made manifest day after day. Consequently the company acquired about 400 acres some little way outside of Detroit, Mich., which has direct communication with all the main trunk lines as well as excellent water carriage conveniences, including a thousand feet of deep water docking.

On this property the company are busy erecting a plant to produce 200 tons of ammonia soda per diem. An idea of the energy that is being exercised can be gathered from the fact that though the works were only started late in 1895 the company are confidently counting on having the whole complete before the end of this year. Brine wells have been sunk on the property, and those that have been finished are, so far, very promising.

At Dunbar, in the Connells ville coke district, Pennsylvania, the company are also putting down 50 Semet-Solvay coke ovens fitted with the requisite plant for recovering the by-products, such as ammonia and benzol, &c. The recovery of the former is of special importance, as it is well known that ammonia is one of the most costly items in the Solvay process. The initial tests of these ovens were very



interesting. The coke from 2,000 lbs. of coal was tested pound for pound with best selected Connelsville bee-hive-oven coke, and proved equal in efficiency for all smelting purposes. The Semet-Solvay ovens, besides giving 15 to 20 per cent. more coke than the bee-hive ovens, gave 21 lbs. of sulphate of ammonia and 100 lbs. of tar per ton of coal. The 160,000 cubic feet of producer gas obtained per ton, heats the ovens for next to nothing, each oven carbonizing six tons of coal a day.

To fully appreciate the magnitude of the various developments it is desirable that some estimate of the present status of the company be arrived at, and this can, we think, readily be done by the aid of the following figures, which represent the condition of the company at the moment:—The capital is £800,000.; the producing capabilities 500 tons of soda ash per day. There are 3,000 men and 15,000 steam horse power employed to produce this amount of ash, the combined energies of which are expended in manipulating 1,000 tons of coal per day, 1,200 tons of limestone, and 800,000 gallons of brine.

#### ANOTHER NAIL IN THE COFFIN.

As the opening of Parliament approaches, we are drawing nearer to the time when, if all goes well, the discussion of the safe flashing point of burning oils will be re-opened. The necessity for this being done will have been once more impressed upon the minds of those who give any thought to this matter, by the advertisements that have recently appeared soliciting tenders for the supply of mineral oil to Trinity House for use in lighthouses. The old stipulations are still in force, for the advertisement states that the 135,000 gallons required must have a flashing point of not less than 145° or more than 160° F. by the close test.

Since the Government advisers are so certain that a 73° oil is all that can be desired for use by the general public, we suppose Trinity House will now begin to mend its ways, and Lord Rayleigh, as their newly-appointed scientific adviser, will see that the way is opened for the introduction of a lower flashing oil. It hardly seems necessary in a lighthouse, where everything is done methodically and with care, to use an oil which is safer than that being used daily in thousands of dwelling-houses in a careless, off-hand way, by ignorant and thoughtless people. But this anomaly is, of course, merely a freak; and counts for nothing. We are being constantly told that all the fault lies with the lamps, not the oil, a truth (?) which even the *Lancet* seems at last to have swallowed. We are open to conviction, but we cannot accept this lamp theory unless those who advocate it will pledge themselves to alter all the lighthouse lamps into "safety lamps," in which nothing but 73° oil shall be burned.

The lamp "improvers" are constantly trying to show (with meagre success, it is true) that the high-flash oils are more dangerous than the low, and they are certain that 73° oil in one of the County-Council-modelled lamps, is quite safe. And so are we certain it is safe—quite as safe as gunpowder in a match factory. There are degrees of safety. To be in keeping with the cocksure assertiveness and assurance of the low-flash advocates, the above must surely be the "positive" degree, and we would fain reach the comparative before feeling safe.

But to return to the assumed danger of high-flash oil; if this assumption is true, what a terrible risk Trinity House runs in using such fatally high-flash oil for their lighthouses, and how imperative it is that, on behalf of the public safety, the lamps should be re-modelled on the latest C.C. lines, and burn low-flash oil. It is the only natural deduction, and yet

we would dare the leaders of the low-flash party to advocate this obviously needful step being taken, either by the Government or Trinity House. No! that would be another thing altogether to distributing dangerous oil broadcast (at a fat profit) among poor and ignorant people, for the loss of whose lives in hundreds a year, neither officials, importers, or vendors can at present be held responsible. Refuge can always be taken behind the Government, who test and virtually guarantee the lot.

There is just one other point. The entire high-flash movement is attributed to the enfeebled condition of our insular mineral oil industry. This belief, and many wilfully misleading hints about the substitution of fair trade for free trade principles, we have explained and dispelled *ad nauseam*, but we would further point out that this country is not alone in thinking 73° oil dangerous, no matter where it comes from. Many of the States in America have laws which speak for themselves, and Holland is now seriously thinking of forbidding the importation of any oil flashing below 104° F. We only ask for 100°. We therefore desire it to be clearly recognised that the high-flash movement is *not* only and solely supported by a few self-seeking, money-grubbing, fair trade fanatics, but by a number of honourable disinterested scientists and public men whose sole aim is the establishment of the truth, be it favourable to their opinions or not. Such men have and will spend time and money in carrying their quest to finality, and we insist that this ultra-trade support be reckoned with in judging the statements of the deeply self-interested low-flash partisans. If the testimony of all monetarily or officially interested parties on both sides were taboed the truth of this long disputed question would soon be reached—much too soon for the S.O. we opine.

#### ANTI-ADVERTISING.

All those who use printer's ink and paint as a means of gaining publicity have been getting it hot from the National Society for Checking the Abuses of Public Advertising. After reading the strictures of the president, Mr. Waterhouse R.A., we hope they all feel heartily ashamed of themselves, and feel they are a disgrace to the nation. If not they ought to do, for Sir Lepel Griffin hath spoken, and, as the bard saith, "I am Sir Oracle, and when I ope my mouth let no other griffin growl"—or something to the same effect. A lot of other pretty and complimentary things were likewise said, and the fate of the advertiser doomed. We do not think there will be any need to convene opposition meetings, at which to play battledore and shuttlecock with pointed epithets and fancy phrases, in order to doom the Bill which this worthy society intends to commend to Parliament. We can jog along the same old path and leave that to those who still want their morning's news for a penny, and 'bus and tram fares at the same humble rate, and lastly to the poor overburdened agriculturists. Mr. F. C. Rasch, M.P., is a host in himself, and with him are the agriculturists to a steam plough tender. To use his own words, what are the distressed agriculturists to do? They grow wheat at 40s. and sell it for 20s., pay rates and taxes for the whole countryside, have to keep the Establishment on its legs, and yet, according to these æsthetic theorists, may not turn an honest penny by letting advertisement spaces. We really cannot tell Mr. Rasch what they *are* to do, but we are confident of what they *will* do—they will "do" for the N.S.C.A.P.A.'s Bill. Suggestive letters those when you think them over. National Society for Controlling Advertisers' Private Affairs is not bad for a start. If the society must be so busy let it concern itself first with the offenders in their president's



craft, and ostracise every artist who has painted an advertisement, or allowed his finished canvas to be used for such a purpose, which naturally suggests as another reading: Never Served a Customer when Asked to Paint Advertisements.

It wants no society to check injudicious advertising. It defeats its own end. The latest telegraphic development has already damaged the house that started it, and dealt sudden death to itself, which fact renders excusable this third and final interpretation: The Nation Single-handed Can Abolish Pernicious Abuses.

## The Patent List.

*This list is compiled from Official sources in the Manchester Technical Laboratory, under the immediate supervision of George E. Davis and Alfred R. Davis, who report professionally upon the value of Chemical Patents.*

### APPLICATIONS FOR ENGLISH LETTERS PATENT.

Improvements in the Construction of Wooden Grids for Gas Purifiers. J. Hawley. 1,351. January 20.  
Apparatus for Degreasing Wool, etc. F. N. Turney. 1,370. January 20.  
Improvements in Filters. S. D. Rowland. 1,399. January 20.  
Removing Pitch from Casks, etc. A. J. Boulton. 1,412. January 20.  
Improvements in Utilisation of Weldon Mud and other Was es from Alkali Manufacture. P. C. Bunn. 1,417. January 21.  
Discharging Residues from Zinc and Spelter Furnaces. H. Martin. 1,454. January 21.  
Charging Retorts in Zinc or Spelter Furnaces. H. Martin. 1,455. Jan 21.  
Manufacture of Sodium Cyanide. J. F. Hutcheson. 1,458. January 21.  
Utilizing Coke oven and other Rich Gases for Manufacturing and Heating. J. T. Brunner and H. Brunner. 1,501. January 21.  
Improved Apparatus for the Treatment of Sewage. W. D. Scott-Moncrieff. 1,545. January 22.  
Utilising Lead Oxide in the Preparation of Battery Elements. D. G. Fitzgerald and C. N. Stewart. 1,564. January 23.  
Safety Valve for Vessels used for Storing or Conveying Compressed Gases. M. Crawford. 1,639. January 23.  
Manufacture and Purification of Ammonium Nitrate and other Salts. T. Fairley. 1,667. January 23.  
Manufacture of Ammonium Nitrate and Sodium Salts. T. Fairley. 1,668. January 23.  
Improved Apparatus for Purifying and Treating Water and Sewage, etc. W. Digby. 1,677. January 23.  
Improvements in Electrodes. W. Digby. 1,678. January 23.  
Manufacture of Disinfecting and Bleaching Agents. W. Digby. 1,679. January 23.  
Improvements in the Manufacture of Salt. F. Perez. 1,729. January 24.  
Manufacture of Briquettes. J. C. Mewburn. 1,750. January 24.  
Gas Carburetted Apparatus. C. C. Walker. 1,817. January 25.  
Manufacture of Edible Fat from Coprah Oil. M. C. A. Ruffin. 1,827. January 25.

### ABSTRACTS OF LATEST COMPLETE SPECIFICATIONS.

*These abstracts are specially prepared for the Chemical Trade Journal and ALL RIGHTS OF PUBLICATION ARE RESERVED. This is the earliest series of abstracts of Chemical and allied patents accessible to the public.*

Improvements in the Manufacture of Chlorates of Sodium and Potassium. J. Hargreaves, of Farnworth-in-Widnes, and Thomas Bird, of Cressington. Eng. Pat. 18,926. October 1, 1894.

The chlorate is made by passing  $\text{Cl}_2$  into a solution of caustic soda, sodium carbonate or bi-carbonate. The absorbing vessels are specially constructed and fitted with agitators. The  $\text{Cl}_2$  gas is passed through these so that the gas enters where the conversion into chlorate is almost completed. During the reaction sodium chloride is deposited, and when  $\text{Na}_2\text{CO}_3$  is used some bicarbonate. To render all the soda available, the agitators are employed. To separate the chlorate from the salt the contents of the absorber are run off into a filter or centrifugal, steam in either case being forced downwards through the residual mass of chloride. The solution so obtained is evaporated to a strength of 100° or 120° Tw., and run into crystallisers. When the chlorine has to be aspirated through the absorbers by an exhaustor, the exit gases are passed over soda, or other suitable medium, to remove all traces of  $\text{Cl}_2$  gas that may have passed away unabsorbed. There are five drawings, showing the details and general arrangement of the plant used.

Improvements in Apparatus for Obtaining Cyanides from Gases. W. Foulis, 45, John-street, Glasgow, and P. F. Holmes, Tunbridge Ironworks, Huddersfield. Eng. Pat. 15,168. Aug. 12, 1895.

This patent provides apparatus for the execution of patent 9,474/92. Iron scrap is dissolved in acid-proof tanks by aid of  $\text{HCl}$  and the solution of chloride lifted by a steam jet into a store tank, from which it runs into a series of tanks containing carbonate of soda, thereby form-

ing carbonate of iron. After settling, the clear liquor is removed by "loose-legs," more alkali added, and the whole pumped or otherwise lifted into a mixer, fitted with revolving paddles, and then run into two horizontal rotary scrubbers, which are a modification of the W. C. Holmes type. The gas, freed from ammonia, is passed through these scrubbers, the cyanides being fixed as ferrocyanide. The liquor is pumped into a tall settling tower, and the clear liquor drawn off into the evaporators. The resulting cake is treated according to the patent referred to at the outset. There are two drawings—one in plan and the other in elevation (part sectional elevation).

Improvements in Purifying Oil Extracted by Solvent from Linseed and similar Substances. W. T. Whiteman, 7, Staple Inn, Middlesex (communicated by Cleveland Linseed Oil Co., Ohio, U.S.A.). Eng. Pat. 23,106. Dec. 3, 1895.

In the usual method of removing the solvent, such as naphtha, which has been used in the extraction of oil, the temperature at which the evaporation of the solvent is effected coagulates the mucilaginous or albuminous constituents of the oil. To obviate this, the dry heat of low-tension steam is employed, the naphtha being removed at a temperature of 140° F. The process is conducted practically in two stages, in the former of which the volume of steam, and consequently the temperature, is kept lower until the second stage, which begins when the bulk of the naphtha has been removed. There are three drawings.

Process for Manufacture of Cyanides out of Molasses, and Lyes resulting from Beetroot Molasses. Dr. H. Reichardt and J. Bueb, both of Dessau, Germany. Eng. Pat. 7,171. April 8, 1895.

Hitherto the attempts made to utilize the gases from the dry distillation of molasses and the lyes of beetroot molasses have aimed at recovering the valuable constituents in the form they occur in the gases—namely, as ammonia and methyl compounds. The crude gases have a very bad smell, and the present process provides for the removal of this smell and the recovery of the nitrogenous compounds as cyanogen. To do this the crude gases are passed without cooling through a system of white-hot fire-brick channels, air being excluded, whereby the nitrogenous compounds are converted into cyanide of ammonia and a little carbonate of ammonia. By passing through a solution of an iron salt, the cyanogen is fixed as ferrocyanide. The carbonic acid gas and sulphide of hydrogen in the gases are also rendered fit for utilization.

An Improved Detergent or Washing Powder. J. T. A. Walker, The Laboratory, Rishon, near Blackburn. Eng. Pat. 3,466. Feb. 18, 1895.

In order to prepare a harmless but active preparation of ammonia suitable for laundry purposes, a mixture of sulphate of ammonia and bicarbonate of soda is used, the ammonia salt being coated with paraffin wax, so that the ammonia is not evolved until the soap is used in hot water. When used with a superfatted soap 10 per cent. of the above mixture is added to the soap base.

ANOTHER FALL IN CANDLES.—The Scotch oil trade, owing to the severe competition offered by English makers, have intimated a further reduction of 3d. per dozen pounds in the price of candles, making a reduction of 6d. per dozen pounds since the beginning of the year.

PERSONAL.—Mr. Charles C. Moore, F.S.C., informs us that he has commenced business as Analytical and Consulting Chemist, at Harley Buildings, 11, Old Hall-street, Liverpool. Telephone No., 6,538. Mr. Moor has for a long while been employed by Messrs. Brunner, Mond, and Co., and has thus had a wide and practical experience.

NITRATE STATISTICS.—The Permanent Nitrate Committee's public statistical circular for February shows that the total exports to Europe during January were 1,735,000 quintals; loading for Europe, 1st February, 1,124,000 quintals; imports (Europe), January, 135,230 tons; deliveries in Europe, January, 62,580 tons; visible supply (Europe), 1st February, stocks and afloat, 673,700 tons.

THE "CUMMER DRYER."—We are informed that the Cumber Drying Machines and system have been adopted at Colonel North's Portland Cement Works, Antwerp, well-known to be one of the best equipped works in the world. The two dryers are each evaporating two tons of moisture per hour, using less than 4 cwt. small coal. Among other important sales and shipments made in January, Messrs. Charles Erith, of 70, Gracechurch-street, advise us of the following:—

|                                   |                           |         |
|-----------------------------------|---------------------------|---------|
| Cummer dryer for superphosphates, | Petit-Quevilly, France... | £ 370.  |
| Cummer dryer for ochres,          | Llanely, Wales            | .. 420. |
| Cummer dryer for clay,            | Glasgow, Scotland         | .. 300. |
| Timber drying apparatus,          | Esslingen, Germany        | .. 238. |
| Ditto                             | Hamburg, Germany          | .. 135. |
| Ditto                             | Bilbao, Spain             | .. 135. |

as well as orders for heating apparatus and pumps, &c.

25112AA



## MERSEY AND IRWELL JOINT COMMITTEE.

A MEETING of this Committee was held on Monday at the offices, Mosley-street, Manchester. Mr. Alderman J. Thompson presided. The Consulting Sub-Committee, through Mr. T. W. Killick, reported with regard to the sewage schemes of a number of local authorities—Bury, Aspull, Hollingworth, Hayfield and Wilmslow. With regard to Bury, it was stated that the Town Clerk of that borough had notified his intention to apply to the court for a further extension of time. The Town Clerk and the clerk to the Committee, however, had not yet arranged a date suitable to both parties on which to make the application. The Committee recommended the adjournment of the matter for a month. Of the Aspull authority the chief inspector reported that good progress was being made at the Wigan sewage farm. The Committee, therefore, recommended that the consideration of the position of this authority be adjourned for three months. From the clerk to the Hollingworth authority a letter had been received. The Committee were of opinion that it was not satisfactory, and they recommended that proceedings be taken for offences under the Act, but that the clerk withhold the proceedings for fourteen days "to enable the authority to agree with the vendor of the land for the outfall works as to the title." A letter had been received, the Sub-committee reported, from the Hayfield Rural District Council, but it did not state that instructions had been given to the surveyor to prepare the necessary plans. The Committee recommended that proceedings be taken against this authority, but that the clerk withhold them for a month, to enable the Council to take the requisite steps in the matter. The Wilmslow Urban District Council wrote informing the Committee that contracts had been made for carrying out the necessary works in the district, and that good progress was being made. The Council, however, found that the works could not be completed by February 1st, the date on which the time allowed by the justices expired. They asked that the time should be extended until June 30th next. The Sub-committee recommended that the clerk should inform the Council that if they would apply for a reasonable extension of time the application would not be opposed by the Joint Committee.—All these recommendations were adopted by the Committee.—Sir H. Roscoe reported on the analyses of the effluents from the works of twenty-two authorities, taken during the past month. Of these 16 were stated to be good effluents, three fair, two unsatisfactory, and one bad. With regard to the unsatisfactory effluents, which were taken from Hindley and Offerton (Stockport Rural District Council), the Sub-committee recommended that the clerk be instructed to write and call the attention of the authorities to the matter, and to state that the committee required some improvement. In the case of the bad sample, taken from the Knutsford works, the Sub-committee recommended that the clerk should inform that Council that "as they are a new authority, the Committee have not on this occasion taken any action against them, in the hope that they will, without delay, take the necessary steps to make their works more efficient; and that, failing this, proceedings will be probably taken."—The report was adopted.

## MANCHESTER CHAMBER OF COMMERCE.

## REPORT OF CHEMICAL SECTION.

THE Executive has met five times since the last annual meeting. The principal subjects which have engaged its attention are the following:—Lead poisoning and the preparation of chrome-lead colours; The Steam Engines (Persons in Charge) Bill; Patents, Designs, and Trade Marks Act Amendment; and The Factories and Workshops Act Amendment Act. The possible danger to health incurred by the makers of chrome-lead colours, and by the wearers of articles coloured with such preparations, was the first subject considered by the Executive. After thorough discussion and comparison of a set of sample textiles, which had been prepared by the chairman, wherein, in the one case chrome-lead colourings, and in the other aniline or some other innocuous dye had been used, the Committee unanimously adopted a series of resolutions which have already appeared in the *Journal*, No. 413, p. 257. In connection with *River Pollution and Smoke Prevention*, the Committee desire it to be understood that, in its opinion, the method at present pursued by the Mersey and Irwell Rivers Committee in proceeding against manufacturers for the alleged pollution of streams is open to very serious objection, as being prejudicial to the interests of trade, and consequently to the interests of the community in general. It commends this subject to the new Committee for careful attention. There can be no doubt that an attitude of greater consideration for manufacturing interests would, in the long run, bring about more satisfactory and abiding results than the drastic measures the Rivers Committee seem disposed to adopt. As an example of the utility of the lenient method of treatment suggested by your Committee, reference may be made to the present

relations between the city authorities and the owners of erstwhile smoky chimneys. It is allowed by all who have any acquaintance with the subject, that the recognition by the authorities of special difficulties on the part of the manufacturers, the rendering of mutual assistance, and the cessation of vexatious proceedings has effected an enormous improvement in the out-turn of black smoke from the chimneys of chemical and other manufacturers. It cannot be doubted that, if the enlightened example of the Manchester Corporation in this respect be followed by the Mersey and Irwell Committee, similar efficacious results will follow with regard to the streams of the Mersey and Irwell watershed.

The Committee regret to note that with the close of their present year of office they will not be at liberty to re-elect Mr. Ivan Levinstein as chairman, nor Mr. Thomas Jackson as deputy-chairman. Both gentlemen have served the Committee in these positions since its formation as the first Sectional Committee of the Chamber, four years ago. Mr. Levinstein (who was the main instrument in the formation of the Section) retires, it is understood, on account of the pressure of other work, whilst Mr. Jackson's retirement is caused by ill-health. In the meantime it is satisfactory to note that the membership of this, the oldest of the Trade Sections of the Chamber, has considerably increased during the year.

## EXPORTS OF ALKALI AND BLEACH.

THE following figures, which are taken from the official foreign and colonial statistics of the United Kingdom, give the amount and value of alkali and bleaching materials shipped to the undermentioned countries during the year ending December, 1895, as compared with 1894:—

| ALKALI.                  |           |           |           |           |
|--------------------------|-----------|-----------|-----------|-----------|
| Port.                    | 1894.     | 1895.     | 1894.     | 1895.     |
|                          | Cwts.     | Cwts.     | £         | £         |
| Russia .....             | 198,500   | 194,738   | 72,280    | 62,115    |
| Sweden and Norway ....   | 135,700   | 159,689   | 28,294    | 33,213    |
| Germany .....            | 127,300   | 112,198   | 42,492    | 32,560    |
| Holland .....            | 105,400   | 132,937   | 22,881    | 24,353    |
| France .....             | 46,500    | 42,777    | 18,261    | 15,173    |
| Spain and Canaries ..... | 305,300   | 319,908   | 127,220   | 110,107   |
| Italy .....              | 218,700   | 234,425   | 79,991    | 72,916    |
| United States .....      | 3,336,700 | 3,524,951 | 764,940   | 770,186   |
| Australasia .....        | 230,700   | 199,166   | 79,112    | 55,895    |
| British North America .. | 234,400   | 215,526   | 61,242    | 54,454    |
| Other countries .....    | 1,043,000 | 1,123,621 | 334,235   | 329,168   |
| Total .....              | 5,982,200 | 6,259,936 | 1,630,948 | 1,560,140 |

| BLEACHING POWDER, ETC. |           |           |       |       |
|------------------------|-----------|-----------|-------|-------|
| Port.                  | 1894.     | 1895.     | 1894. | 1895. |
|                        | Cwts.     | Cwts.     | £     | £     |
| United States .....    | 786,400   | 890,741   |       |       |
| Other countries .....  | 504,300   | 522,757   |       |       |
| Total .....            | 1,290,700 | 1,413,498 |       |       |

## PETROLEUM EXPLOSION ON A STEAMER.

A DISASTROUS explosion occurred last week on board the barque *British Army*, owned in Liverpool by Messrs. Gillson and Chadwick, lying laden at Barry Dock, Cardiff, a man named White and a boy being killed, and a number of men who were working the cargo severely injured. The *British Army*, a barque of 1,338 gross tonnage, was moored at the western wall of the basin at Barry Dock in order to discharge a cargo of pitwood. The cargo had been discharged, and a gang of men were employed to clean out the hold and the bilges. It appeared that the previous cargo carried by the ship had been petroleum, and a considerable quantity of the oil had leaked to the bottom of the boat and lay to the depth of several inches in the bilges. About three o'clock one of the men, named Martin, was in the act of removing lumber boards, when a terrific explosion was heard, followed almost instantly by another report, both being heard for a considerable distance. On a number of men going down into the hold to ascertain the effects of the disaster they found two dead bodies fearfully burnt, one being Thomas White, junr.; the boy killed was subsequently identified as David Jones—both belonging to Barry. The following were severely injured:—Thomas White, Wm. Finlayson (chief mate of the barque), William Brown, William White, and Henry Lloyd. Three of the men were removed to the accident hospital in Kingston-crescent, and two others, Wm. White and Henry Lloyd, were taken to their homes. The fire continued to burn on the vessel for some five or six hours.



## THE NEW RÖNTGEN LIGHT RAYS, WITH SHADOWGRAMS.

[SPECIALLY CONTRIBUTED.]



COINS ENCLOSED IN LEATHER PURSE. EXPOSURE FOUR MINUTES.



FROG THROUGH SHEET OF ALUMINIUM. EXPOSURE, TWENTY MINUTES.



LIVING HAND THROUGH BLACK VULCANISED FIBRE. EXPOSURE, FOUR MINUTES.

SHADOWGRAMS BY MR. A. A. CAMPBELL SWINTON, REPRODUCED BY SPECIAL PERMISSION OF THE "PHOTOGRAM."

WHEN, a few weeks, ago a Vienna journalist startled the world by announcing that Professor W. K. Röntgen had been able to obtain photographs of objects enclosed in wood and other materials, hitherto considered opaque to light, the scientific world was rather sceptical, and the discovery was discounted by the wise-acres, by ascribing all the astonishing results that the Würzburg professor was said to have achieved, to the action of the well-known ultra-violet rays. In a measure this was pardonable, as it was known that the cathode rays of a Crookes' tube would pass through thin sheets of metal, and excite fluorescence when allowed to fall on paper saturated with platino-cyanide of barium; while by the interposition of specially-cut patterns, clearly defined shadows of the same could be obtained. The fuller particulars that have transpired however put another aspect on the matter, and it is now undoubtedly accepted that Professor Röntgen has made a very important discovery, which brings home to us how loose are our notions of the terms opaque and translucent, and how very finite our visual powers.

Professor Röntgen, in his communication to *Nature*, states that his new rays, or X-rays, are different to cathode or the present known ultra-violet rays. This statement has been confirmed by communications from different parts of the world, and it is now stated that Professor Silvanus Thompson has found X-rays in the electric arc. The chief points of dissimilitude between these X-rays and cathodic rays are that they are not deflected by magnets, do not diffuse readily, and pass through thicknesses of wood and metal which would absorb cathodic rays. Further, Röntgen contends, and apparently with justice, that the X-rays do not (like the cathode rays) proceed from the cathode itself, but from that part of the glass where the latter strike. Thus, if the cathode rays generated by a good vacuum tube are deflected by a magnet, the X-rays are seen to proceed from a fresh point. As compared with the visible infra red and hitherto known ultra-violet rays, the X-rays thus show negative properties, for they are not refracted by passing into water, carbon bisulphide, rock-salt or glass; cannot be polarised by any ordinary media; and are incapable of regular reflection at the surfaces of rock-salt, &c.

In their action on a sensitised photographic plate, the cathode and X-rays are alike, and this seems to be the only property that they have in common. The images obtained by exposing objects to these rays in front of a sensitised plate can hardly be correctly called photographs, being in reality shadowgrams, and as such we shall speak of them. Professor Röntgen has made very interesting experiments with these new rays: for example, paper is very transparent, the fluorescent screen will light up, when placed behind, a book of a thousand pages; printing ink offers no marked resistance. Similarly the fluorescence shows behind two packs of cards; thick blocks of wood are transparent; boards of

pine 2 or 3 centimetres thick absorb very little of the rays; glass plates of 15 m.m. thick behave similarly, though lead glass is much more opaque than glass free from lead. The specimens that we are able to reproduce here are shadowgrams taken by Mr. Campbell Swinton, and for which we are indebted to the *Photogram*, as well as for many interesting particulars. There are yet several points that have to be subjected to closer and more searching investigations, for Professor Röntgen deems it decidedly questionable whether the impression on the plate is the direct effect of the X-rays, or a secondary result produced by the fluorescence of the material of the plate. Though the transparency is not wholly determined by the density, yet, as a general rule, Professor Röntgen's experiments show that the permeability of different bodies is in proportion to their density.

**DANGEROUS EMPLOYMENTS.**—An order has been issued by the Secretary of State, under the Factory and Workshop Act, 1891, declaring that processes in the mixing and casting of brass, gun metal, bell metal, white metal, delta metal, phosphor bronze, and manila mixture are dangerous or injurious to health.

**REPORT OF THE GAS LIGHT AND COKE CO.**—The report of the company for the half-year ended December 31, 1895, states that the accounts show, after providing for all fixed charges, a balance of £524,091., out of which the directors recommend a dividend at the statutory rate of 12½ per cent. per annum, carrying forward £164,121. The consumption of gas by the ordinary customers has increased at the rate of 2.58 per cent., and that by the automatic-meter customers has been equal to a further increase of 2.28 per cent., making together 4.86 per cent. on the quantity sold during the December half-year, 1894. In order to provide for the expenditure in connection with the supply of gas by automatic meters and for further capital purposes the directors, in December last, offered for sale by tender a further sum of £100,000. ordinary A stock. The whole of this has now been subscribed for at or above the reserved price of £292. per cent. The prices realised during the half-year by the sale of coke and tar products may be considered, on the whole, favourable, and it is satisfactory to be able to report that the Board of Trade returns show that the cement manufacturers, who are considerable buyers of the company's coke, are participating very largely in the marked improvement which has taken place in the general export trade of the country. On the other hand, the market for sulphate of ammonia continues in a depressed condition, as is evidenced by the reduction in the company's revenue under this head, as compared with the corresponding figures for the December half-year, 1894.



## MANCHESTER CORPORATION AND THEIR GAS RESIDUALS.

THE Local Government inquiry upon the above subject, which was opened by Colonel Ducat, R.E., on Jan. 7th, was continued last Tuesday and Wednesday, and concluded on Thursday. Mr. Hudson, deputy town clerk, appeared on behalf of the Corporation. Mr. Sutton and Mr. R. Richards appeared to oppose on behalf of certain property owners and ratepayers and the Manchester and Salford and District Property Owners' Association.

The Assistant Town Clerk made a formal explanatory statement with regard to the application. He said that similar powers to those sought by the Manchester Corporation were possessed under certain Acts of Parliament by Barrow-in-Furness, Birmingham, Bradford, Leeds, and Leicester. The Corporation would take care not to exercise the powers in an arbitrary manner, or in such a way as would be a nuisance in the district of Bradford-road gasworks. The Corporation asked for thirty years in which to repay the proposed loan of £25,000.

Alderman R. Gibson said the question of the manufacture of sulphate of ammonia by themselves had been exercising the mind of the Gas Committee during the last twelve years, but it was only last year that the matter was brought to a head. Various causes tended to bring this about, but the main causes were the reduction of the price of gas to the extent of twopence per thousand cubic feet. That had decreased the profits of the works to no less an amount than £50,000 a year, and the committee had ceased to make a charge in the shape of rent for gas meters, which reduced the income of the committee by £10,000 to £12,000 a year. The Corporation also had a large electric lighting installation, which might become a powerful competitor to the gasworks, which were being managed in the best interests of the citizens. The committee had from twenty-five to thirty acres of unoccupied land for which they paid interest, and it had occurred to the committee that it would be wise on their part to develop the resources at their command for the benefit of the people.

Alderman Gibson was then cross-examined by Mr. Sutton, who first asked if he was right in understanding that the Manchester Corporation anticipate making a considerable profit by working up the residuals?—We expect to make a profit.

Have you prepared figures showing how the profit is to be made?—I think we can show that, too.

Some figures having been handed in, Mr. Sutton asked whether the Corporation were acting upon those figures?—I cannot say that. The figures were taken out as appearing to us to be of interest to-day.

Can you produce the figures upon which the Corporation have acted?—No.

May I take it that the Corporation have satisfied themselves that they will make a greater profit by manufacturing the bye-products than they receive by selling the residual products?—Yes.

Have you any figures which show the profit made by selling the residual products?—The annual statement shows the amount received. In this matter we rely upon the statement made by our own engineer.

Have you taken the opinion of any independent, impartial, practical man who has had experience and who is generally acquainted with the cost of putting down the plant required?—No! certainly not, except our own engineer. What we propose to do at present is to limit our attention to the manufacture of sulphate.

Why do the Corporation apply for powers which it is not their intention to put in force at present?—In order that we may put them in force when we feel disposed to do so.

Have you any plan of the land on which you propose to put down your plant?—Yes (the plan was handed in).

What is the size of this triangular piece of land?—Ald. Gibson (prompted by Mr. Stevenson), About 10,000 square yards.

It is a triangular site, therefore the corners would scarcely be capable of being utilized. Do you think it can be all made use of?—The whole of it can be utilised. On one side of the land is a canal, and on another a railway. The land is about a quarter of a mile distant from Philips Park, and it was purchased by the Gas Committee about twenty years ago. There are two sets of chemical works, Messrs. Hardman and Holden's and Mr. Lockwood's, nearer the Park than this triangular piece of land. (Cries of "No, no.")

Mr. Sutton said that appeared not to be so.

Have you made any inquiries about the sulphate market?—We know all about the market without making inquiries.

Perhaps, then, you will tell me what the prices of sulphate have been during the last ten years?—I must be excused answering a question like that. (Laughter.)

With regard to Messrs. Hardman and Holden's works. I believe that the firm have for many years worked up the ammoniacal liquor produced at the Manchester Corporation Gasworks; and that up to last year, when they could not compete against the amount offered, they took all the tar?—Nearly all.

They had extensive works for the manufacture of gas bye-products?—I don't know what is the extent of their works.

Did they not pay the Corporation £2,000 for laying down a line of pipes from the different gasworks to their own works?—The pipes were put down originally by Messrs. Spence.

But afterwards Messrs. Hardman and Holden put down fresh pipes, and although they paid for the pipes the pipes belong to the Corporation?—That is so.

Have you received a letter from Messrs. Hardman and Holden in which they stated that they were prepared to show that you received from them the highest price paid to any corporation for gas water and tar?—Yes, they said so.

And they undertook to prove it?—Probably they might say so.

Do you know as a matter of fact that Messrs. Hardman and Holden have been satisfied with an average profit of three per cent. in the gas tar and ammoniacal liquor, and that in 1894 they made a serious loss?—I do not know that at all.

Who is to be manager of the new works?—The Gas Committee have not yet fixed upon one, but personally I think we might get a manager for a salary of £200 a year.

What? A gentleman well acquainted with one of the most tricky trades in the kingdom? (Laughter.)—I am surprised to hear that it is a tricky trade. (Laughter.)

I mean tricky in the sense that the prices of the product vary from fifty shillings to fourteen per hundredweight.

The Rev. S. N. Perry, Mr. G. Worthington, and Mr. Guymer opposed the application because of the nuisance which they said would be created by the new works.

By Mr. William Maben: Are the committee satisfied that they have made the best of their opportunities in the past for obtaining the best price for their bye-products?

Alderman Gibson: Yes.

Do they consider that the laying of the underground pipes and permitting them to be used by one firm was a fair arrangement?—Yes.

Do you mean to say that the firm who has that advantage was in no better position than a firm who had not pipes, and had to pay for the carriage of the material?—Yes. The carriage would not amount to more than the cost of the pipes.

In addition to the pipes are there any other conditions of a restrictive character, which have operated against firms tendering?—All are served alike.

But perhaps all are not equally able to comply with the condition that £9,000 should be deposited with the Corporation before the contract for these liquors can be obtained.

Alderman Gibson said considering the great responsibilities at stake the committee thought it a reasonable condition.

Is it a fact that four per cent. interest has been allowed for the amount of deposit?—I don't know.

And you borrow money at two-and-a-half per cent.?—If we can we do.

Has any other contractor besides Messrs. Hardman and Holden ever succeeded in obtaining the contract for liquor and tar up to the past year?—Certainly.

You advertised for tenders for the liquor last year. How many tenders were sent in?—Only one. The tender of Messrs. Hardman and Holden.

Then it was the highest tender (Laughter.) You will agree with Mr. Sutton's statement that this is a tricky trade. I would like to know the amounts of the tenders sent in for tar in March last.

The Commissioner said he could not allow the question to be put. The inquiry was not intended to guide contractors as to their offers in the future.

Mr. G. E. Stevenson, C.E., cross-examined, stated he had had 25 years' experience in gas manufacture. He had also had experience in the manufacture of tar and gas liquor products. In sulphate in particular at Peterboro' and in South America. The plant was designed by himself at both places. He had been with the Manchester Corporation since October, 1891. He had examined in every detail the plant at Beckton and Sheffield. The land was quite large enough. The plant would be in two distinct portions, one for sulphate, and the other for dealing with their spent oxide for the manufacture of the sulphuric acid. The latter would be capable of producing 20 tons of vitriol per day, at 15s. per ton. The whole plant would cost £20,000, made up as follows:—*Acid plant*: Burners and shed, £2,500; Glover and Gay-Lussac towers, £2,000; chambers (five in number), £5,000; pumps, pipes, and accessories, £500. *Sulphate plant*: Boil-house, chimney, and lime shed, £2,000; three boilers, £1,400; sulphate apparatus, complete, £3,000; shed for same, £400; condenser, £600; lime tanks, £600; filters and settlers, £1,500; Devil liquor tank, £200; and pumps and accessories, £300. He estimated that the life of the acid plant would be 10 years, and that of the sulphate 20. In further cross-examination, it transpired that the total cost of the production at Leicester was £3. 18s. 6d., at Messrs. Hardman and Holden's £3. 9s., as com-



pared with the Corporation estimate of £2. 12s. 4d. This difference was attributed to the greatly-improved plant the Corporation would have to work with.—Mr. Sutton: Are you aware that Messrs. Hardman and Holden already claim to have the best available plant? I know nothing about that.—Supposing through later developments in the recovery of cyanides you have to fall back on pyrites, do they not contain arsenic? Do you suggest that you can make pyrites acid without causing any nuisance the same as with spent oxide? I am not experienced in the manufacture of sulphuric acid.—If you are not experienced in the details, and cannot go into these particulars, what is the worth of your figure of 15s. per ton for the acid? The worth is this, I know two large places where they are making it at this figure—one is Beckton.—Have you any one of your staff of chemists who have had anything to do with the manufacture of sulphuric acid? I do not know that we have.

On the resumption of the hearing, Mr. Stevenson was recalled for further cross-examination, but before the cross-examination was proceeded with Mr. Hudson said that since the last hearing Mr. Stevenson had prepared a revised estimate of the cost of making sulphate of ammonia, which he now desired to submit. This having been agreed to, after complaint from the other side that the revised figures had not been shown to them during the interval, Mr. Stevenson said that while he was still of opinion that the estimate he formerly submitted was approximately correct as a whole he desired to make some slight amendments in matters of detail. The total working expenses he now made out to be £2. 17s. 4d. per ton, as against his previous estimate of £2. 12s. 4d., an increase of 5s.

Mr. Sutton protested against the introduction of an entirely new set of figures, and proceeded to cross-examine Mr. Stevenson with the view of showing that the Corporation is making quite as much from the sale of ammoniacal liquor as it is likely to make by the manufacture of sulphate of ammonia. Attention was directed to the fact that during the past six months the return from the manufacture of sulphate at Beckton was only 1s. 8'63d., as against 1s. 9'81d. received for the ammoniacal liquor at Manchester, but in reply to this Mr. Stevenson said the Beckton and Manchester works were not "on all fours" in this matter, as the Gas Light and Coke Company had works scattered all over London, and from these works they had to send the liquor to the residual works at Beckton, which no doubt cost a good deal. He had always been aware that the published returns from Beckton were not as favourable as those from some other works. Mr. Sutton here suggested to witness that the cost of carriage was balanced by the absence of freight at Beckton for the finished sulphate, an expense the Corporation would have to bear.—Witness: I cannot say. With the best plant they could obtain, he believed the Corporation could make sulphate of ammonia at a profit, as he had previously indicated. He thought that the sum included for wages in his estimate of the cost of sulphate making was quite sufficient for the purpose. It was true that it was proposed to increase his own salary by £200. per annum, but that had nothing to do with the proposal to manufacture the by-products.

In the re-examination of Mr. Stevenson, letters were read from the Birmingham and Leeds Corporations denying that they had given up the manufacture of sulphate of ammonia because it was not profitable. The cause of Leeds giving up was that the plant the Corporation took over was so old and dilapidated it could be worked no longer.

[The conclusion of the evidence will be given next week.]

**EXTRACTING GOLD FROM PYRITES.**—According to the *Temps*, a discovery, which is likely to be of great importance to gold mining, has been made by a French chemist, M. de Rigaud, who, it is asserted, has found a cheap means of extracting nearly the whole of the gold contained in pyrites. The process, which is claimed to be a considerable improvement on the cyanide process, consists in subjecting the ore after crushing to the action of a powerful solvent compound of chemicals of a comparatively inexpensive nature. It is stated that if heat be applied during the process the gold becomes separated from the ore in a few hours, but in practice it has been found that the same result is arrived at in about two days by simply leaving the solvent to do its work unaided. M. Rigaud estimates that a mill capable of treating 500 tons of ore a day by his process could be built at a cost of £20,000. The apparatus necessary for the manufacture of the solvent could be erected for about £250., and the substance itself would cost about £60. a ton. As a ton of the solvent would suffice to treat 5,000 tons of ore, the cost of treatment would only be about 3d. a ton, exclusive of capital charges. The system of crushing would, of course remain as at present. It is not claimed for the process that it can be applied to every class of ore, but it is believed that it will be found available in the majority of cases, especially for the treatment of parings and residue. It remains to be seen whether practical experience will confirm the results of experiments in the laboratory.

## Our Book Shelf.

**HANDY READY RECKONER.**—Compiled and Published by K. Openshaw, Wyke Regis, Weymouth.

This reckoner is specially designed for the use of those who have to make calculations of wages and costs for which it gives the necessary details, for one to 300 hours, on a basis of 54 hours per week. Its main feature is its compactness, all the hours and rates being on eight pages; whereas in the majority of reckoners it takes one page for each rate, giving but a small number of hours compared with this reckoner. By this arrangement you can tell at a glance what the amount for any number of hours up to 300 is, without any calculation. From these few facts it is apparent that such a reckoner will be of great assistance to persons making estimates for prospective work, and for calculating the cost of work done.

**CHEMICAL RECIPES.** By The Atlas Chemical Company. 316 pp., containing nearly 1,000 recipes. Sunderland: Hills and Co. 1896.

Recipe books, as a rule, are not of any great value to those who wish to manufacture from the formulae given. The present work is, however, most emphatically an exception. Although chiefly interesting to the manufacturer on a small scale, there can be no doubt that the more important firms will find many useful hints and suggestions, which, in the hands of practical experts, may be turned to good account. To the small manufacturer, however, the book will prove invaluable. Not only are the recipes given, but full working directions are also added, directions which are the outcome of actual practice. The price may be thought at the first blush rather high, but a moment's consideration will show that it is by no means so, for it must be remembered that in purchasing a work of this nature the buyer gets "brains" for his money, and they ought to be paid for. The first part of the work deals largely with pigments, fluxes, enamels, and glazes for ceramic work, but many of the recipes given are applicable to other uses, and consequently the first portion must by no means be treated lightly by those who are not particularly interested in these manufactures. Part II. deals with recipes for the preparation of carbonated drinks, paints, metal polishes, and blackings; blues, varnishes, stains, and lacquers; glues and pastes; wood stains and polishes; printing, writing, stamping, and lithographic inks; soaps, dyes, and dyeing recipes for textile goods; ship compositions and paints; stains, dyes, and varnishes for leather; and last, but not least, a collection of recipes dealing with the preparation of minor dysalteries, such as starch gloss, baking, egg, and custard powders, pickles, spices, relishes, scents, toilet powders, and temperance beverages. It would be hypercritical to criticise prominently the few subjects which are treated somewhat superficially, for it must be admitted that for a work of its kind the errata is small, the text, with the exception of a few literals, being faultless. "An ounce of practice is worth a pound of precept," and, bearing this in mind, no one interested in any of the subjects enumerated above should fail to obtain this valuable handbook.

**LOCAL GOVERNMENT ANNUAL.** By S. Edgecumbe-Rogers. 270 pp. London: Local Government Journal Office. 1896. 1s. 6d.

There have been several improvements upon the last number of this useful annual. The main feature is still the "Remembrancer," in which the last day for fulfilling certain regulations of the law is indicated. The growth in the number of District Councils during the last year has been considerable, and no pains have been spared to include all the new ones in the list. There is also much useful information concerning the Local Government Board, London School Board, and County Council, as well as all the various Metropolitan Boards. The information brought together in this annual would otherwise have to be sought in the pages of two or three costly publications, a fact which makes it remarkably cheap for the price at which it is issued. Of all the Local Government handbooks and official directories we think this annual is far and away the best and cheapest.

**CALVERT'S MECHANICS' ALMANAC.** By J. Nasmith. 64 pp., with diagrams. Manchester: John Heywood. 1896. 4d.

This annual contains the usual collection of useful information. There is nothing very striking in this year's number, but there are several interesting articles, including those on Moisture in Steam in Horizontal Pipes, New Standards of Length at Mason College, Notes on Incrustation in steam boilers, Testing Engines and Boilers, and the utilization of the Niagara Falls. There are also diagrams showing the proportions of crane-hooks, pulley blocks, and shackles. For the price it is a very useful little compilation.



**LAW'S GROCERS' MANUAL.**—Compiled and Published by J. T. LAW. 842 pp., including index. Liverpool: 1895. 5s. 6d., net.

There is a vast amount of information scattered here and there through the numerous trade journals that are connected with the grocery and kindred trades. The object of the author has been to bring all this information together, and so provide a description of almost every article that can be met with in the trade. The names are given in all the known foreign languages, and, being arranged alphabetically, can be referred to with a minimum amount of trouble, cross references being frequent. There is also a fairly good index. At the end of the alphabetical list there is some additional information regarding licences, tables of foreign money and weights, and similar useful items. The title of the work is somewhat misleading, as it contains a lot of information about things outside the range of the grocery trade. The more strictly chemical descriptions are at times rather vague, not to say incorrect, but we do not think these items ought to be taken as typical of the reliability of the book, as there is much evidence to the contrary. The information given will be found of use to drysalters, oil and colour men, chemists, and many others, to whom we can honestly commend this work.

**CATALOGUES.**—*Messrs. Pott, Cassels, and Williamson*, Motherwell, near Glasgow.—This firm sends us a novel catalogue of their Weston Hydro Extractors, built upon pivot, and suspended self-balancing principles. There are also descriptions of several applications of these centrifugals to the requirements of the sugar industry, particular attention being merited by their improved steaming-out arrangement, whereby the basket can be steamed either outside or inside at will. They also give illustrations of various woven wire and perforated linings for centrifugals, in brass, iron, copper and zinc. The novelty of the get-up will do much to popularise this useful catalogue.

*Messrs. Easton, Anderson, and Goulden, Ltd.*, 3, Whitehall-place, London, and Erith, Kent.—This catalogue is nicely got up, and well and fully illustrated. Much space is devoted to the specialities of this well-known firm, notably their turbines, centrifugal and other pumps. The Grafton high-speed engines are also fully described. In the section on pulverizers and mining machinery, particular attention is drawn to the "Niagara Pulverizer," which has recently been introduced by this firm. At the end of the catalogue there is also an interesting collection of electrical machinery, while we notice that the firm give particular attention to the manufacture of cordite plant.

It is desirable to draw attention to the fact that since this catalogue was published, the company's telephone number has been altered to "No 4 Dartford."

## THE STATE OF THE CHEMICAL TRADES.

**FULL** time is being worked in chemical and white lead works in the Tyne and Wear district. The Durham coke-men are fairly busy, but the cement works are rather quiet. Salt-workers are busy in the Middlesbrough district. At Burnley and neighbourhood paper makers, stainers, and chemical works are well employed. There is plenty doing in the pulp and paper works at Barrow. There is no change in the chemical industry at St. Helens, but things are reported as improving at Runcorn and Widnes. The salt trade at Winsford continues very depressed as far as loose salt is concerned, but block salt at Winsford and Middlewich is better. The chemical trade has been normal. Seed crushing mills at Hull are now working continuously with two shifts. The paint and colour trade is quiet. At Wolverhampton, galvanisers and hollow ware enamellers are busy, as are also oil, colour, and varnish makers. The glass bottle trade is feeble at Brierley Hill, but flint is better. In Swansea and district copper and chemical industries are dull, but there is plenty doing in the patent fuel trade.

## Market Reports.

### TAR AND AMMONIA PRODUCTS.

Benzols are easier, 90's now standing at 2s., and 50/90's at 1s. 8½d. Otherwise there is practically no change in the market, carbolic acids being firm. Crude naphtha stands at 10d., a nominal price, values depending on quality; solvent, 1s. 6d. Pitch weak at 35s. 6d. to 36s., f.o.b., East Coast.

Sulphate of ammonia is rather firmer, with a fair demand. London makers having advanced their values, prices are more settled. Beekton stands at £8. 10s., the same figure holding good for London outside makes. Liverpool £8. 8s. 9d., Hull £8. 8s. 9d., and Leith £8. 7s. 6d. to £8. 8. 9d., all prompt. Nitrate firm.

## THE METAL MARKETS.

**LONDON, WEDNESDAY.**—Pig iron, dull: Scotch warrants closed at 47s. 2½d.; Middlesbrough, 38s. 3½d. cash, and hematite, 48s. 9½d. Copper, easier: Chili bars, G. O. B.'s and G. M. B.'s closed at £43. 17s. 6d. to £44. 2s. 6d. cash, and £44. 5s. to £44. 10s. three months. Tin, easy: Straits closed at £61. 2s. 6d. to £61. 12s. 6d. cash, and £61. 12. 6d. to £62. 2s. 6d. three months. Australian, £61. 17s. 6d.; English ingots, £65. Lead, firm: Spanish, £11. 7s. 6d.; English, £11. 10s. to £11. 12s. 6d.; Silesian spelter, ordinary, £14. 15s. Nickel, 1s. 2½d. Antimony, £30. Quicksilver: first hands, £7. 7s. 6d.; second hands, £7. 3s. 6d. Copper shares, quiet: Cape, 2½ to 2¼; Copiapo, 2 to 2¼; Libiola, 2¼ to 3; Mason and Barry, 2¼ to 3; Rio Tinto, 17½ to 18½; Tharsis, 4½ to 5½.

**GLASGOW, WEDNESDAY.**—Market steady, with fair business. Scotch done at 47s. 3d., 47s. 4d., and 47s. 3d. cash, also at 47s. 5d., 47s. 6d., and 47s. 5½d. one month; closing with buyers at 47s. 2½d. cash, sellers ask 47s. 3½d. Cleveland done at 38s. 5d. cash; closing with buyers at 38s. 3½d. cash, sellers ask 38s. 4½d. Cumberland hematite done at 48s. 11d. and 48s. 10½d. cash, also at 49s. 1d., 49s. 2d., and 49s. 1d. one month; closing with buyers at 48s. 9½d. cash, sellers ask 48s. 10½d. Middlesbrough hematite closes with buyers at 46s. 1½d. cash, sellers ask 46s. 3d.

## REPORT ON MANURE MATERIAL.

There has been more inquiry, but buyers do not seem to be in any hurry, and prices do not show any improvement. Quotations for mineral phosphates are unchanged, and there is not much doing in the higher grades, but there have been sales of South Carolina for summer shipment at something under 5½d. per unit. There has been sales of cargoes of River Plate bones, near at hand, at about £3. 15s. per ton, and £3. 15s. is nearest value of any cargoes afloat. Crushed Kurraachee bones may be had at £3. 18s. 9d. per ton on spot, and at £4. for shipment. On spot, Bombay bone meal offers at £3. 17s. 6d. to £4. per ton, according to quality, and fair average quality, for shipment, at £3. 15s. per ton. The market for nitrate of soda is firm in all positions, though the combination of producers has not yet been finally arranged. Due cargoes are worth 7s. 9d. to 7s. 10½d. per cwt., according to size, ordinary quality. On spot, the quotations are 7s. 9d. for ordinary, and 7s. 10½d. for fine quality. A cargo of Liebig's guano has changed hands, but price does not transpire.

## MISCELLANEOUS CHEMICAL MARKET.

In the alkali trade business continues fairly brisk in all the leading lines. Bleaching powder is still in active demand for export, and price is unaltered at £7., f.o.r. makers' works, and £7. 5s. per ton, hardwoods f.o.b. Liverpool; for continental markets, £6. 15s. f.o.b. Caustic soda continues to have rather an upward tendency, with a good inquiry on the spot, and to-day's prices may be taken as follows:—F.o.b. Liverpool, 77%, £9. 10s.; 74%, £8. 12s. 6d.; 70%, £7. 12s. 6d.; 60%, £6. 12s. 6d. nett, per ton, 10-ton lots and upwards. Alkali, 58%, without change, at £3. 7s. 6d., bags, makers' works. Soda crystals, 37s. 6d., bags. Bicarbonate of soda, in bags, £6., f.o.r. Chlorate of potash advanced to 4½d. Chlorate of soda, 6½d. per lb. Sulphate of copper remains very active, and price has advanced to £16. 10s., f.o.b. Brown acetate of lime is still offering, to realise, at £4. 15s., c.i.f.; grey, nominal, at £7. 10s. to £7. 15s., c.i.f. For muriate of ammonia the demand is, generally, good, and price firm. Other ammonia salts unchanged. Yellow prussiate of potash, 7¾d., with a slightly weaker tendency. Lead salts firm. Potash, caustic and carbonate, are without any change in position or value. White powdered arsenic still selling at high rates, owing to scarcity, nearest spot value being £16. 15s. to £17., f.o.r. Garston. Sulphocyanides in fairly good request, and prices unaltered.

## LIVERPOOL OIL AND COLOUR MARKET.

WEDNESDAY.

**OILS.**—There has been more doing in palm oil. Lagos has been selling at £20. 2s. 6d. ex quay, and £20. 7s. 6d. transit. Cargo ex quay has been done at £18. 15s. Olive is firm, business is more active, and prices are inclined to advance. Though linseed is dull, the price for Liverpool makes in export casks remains 20s. 9d. to 21s. per cwt. There is no alteration in cottonseed, Liverpool refined



being quoted 17s. 6d. to 17s. 9d. per cwt. Castor is steady, there being a fairly good demand for good seconds Calcutta at 23½d. ex quay, and 2½d. store. Sales of first pressure French ex store are reported at 23½d. per lb. Tallow is in moderate demand, without any variation in prices. Resin is steady, the lower grades being in good demand at full prices, but the finer qualities are rather neglected. Spirits of turpentine are firm, with a fair trade doing at 21s. 6d. per cwt. Petroleum dull, values being 6¼d. to 7¾d. for American, and 6¼d. per gallon for Russian refined.

### LIVERPOOL MINERAL MARKET.

Our market this week has ruled steady, some minerals showing an advance. Manganese arrivals have improved, but as they have gone direct into consumption, prices are somewhat stiffened; spot stocks are small. Ground manganese is unaltered at £6., £8., £10., and £12. 10s per ton, according to quality. Manganiferous iron ore is quiet at 16s. to 17s. 6d. per ton, c.i.f. Chrome ore: Arrivals are coming in steadily, but the demand is good and prices are well maintained. Bauxite: Inquiries continue to increase, and prices are firm at 20s. per ton for first, 16s. per ton for second, and 12s. per ton for third quality, f.o.b., in cargoes. French chalk: Arrivals have improved, but they scarcely keep pace with the demand, and prices are therefore strong, with an upward tendency: "Angel White" brands at 70s. 9d. to 75s., 80s. to 90s., and 100s. to 110s. per ton, according to grade. Wolfram and scheelite: Spot stocks are scarce, and the inquiry is good, so that prices have somewhat advanced, and have an upward tendency. Arsenic is scarce at £17. to £19. per ton. Fuller's earth: The demand continues steady, the prices for "Emerald" and other brands being unaltered at 50s. for lump, 55s. for ground, and 75s. for impalpable powder. Rottenstone: Prime lump is scarce with a good inquiry, and full prices are being paid: £8. 10s. to £15. per ton, according to quality. Ochres and umbers are moving steadily at somewhat higher prices; J.C. ochre being done at 65s. per ton, and prime umber at 40s. per ton. Carbonate and sulphate of barytes remain unaltered; the demand is quiet, and prices for carbonate are 60s., 70s., 80s., and 100s. per ton, according to quality; prime selected crystal being done at higher prices, as the quantity is but small. Plumbago: For founders' and lubricating purposes the demand continues good, sales being made at £6. to £10. per ton; Ceylon qualities are in good demand at £15. to £20. per ton, according to grade. Pumice stone: The demand is steady, ground being done at £6. to £7. per ton, and superior Teneriffe lump stone at £7. 10s. per ton. Bog ore is in more request at 22s. 6d. to 25s. per ton, according to quality. Magnesite: Raw lump and ground are steady at somewhat higher prices. Lead ore: Potters' qualities meet with a good demand at somewhat higher prices.

### WEST OF SCOTLAND CHEMICALS.

GLASGOW, TUESDAY.

The general market is perceptibly livelier, and with promise of more life as the year opens out. Inquiries after oversea shipments for the new season have commenced, and home orders, though not to say abundant, are in fairly respectable bulk. At the same time stocks do not grow at any inconvenient rate, and prices are for the most part very steady, with no weakening in any case. Sulphate of copper has advanced in price. The position of sulphate of ammonia is still unsatisfactory, with procurable prices at far too low an ebb; but there has been some slight amendment during the week, and Leith prompt quotation may now be stated at £8. 7s. 6d. to £8. 10s. Distinctly superior sorts are held for the latter. Nitrate of soda also is slightly dearer. In the mineral oil and paraffin section the only change is a further drop of 2d. per dozen pounds in candles (paraffin). The raw materials (scale and wax) stand nominally at the reduction of 1½d., as stated below, but makers are taking less, though the exact figures are not allowed to transpire.

Chief prices current are:—Soda crystals, £2. 2s. 6d., nett, Tyne; soda ash, 48/56°, £3. 15s. to £4. 15s. nett, Tyne; white alkali, 48/52°, £4. 10s. to £5. nett, Tyne; alum in lump, £5. 10s. nett, Glasgow; caustic soda, white, 70° £9. 5s., 70/72° £7. 10s., 60/62° £6. 10s., and cream 60/62° £6. 10s., all nett, Liverpool; bleaching powder, £6. 15s. to £7. 5s. nett, Tyne; saltcake, 27s. 6d.; borax, English, refined, £20., and boracic acid, £30. nett, Glasgow; bicarbonate of soda, 5-cwt. casks, £6. 10s., and 1-cwt. casks £6. 15s. nett, Liverpool; bichromate of potash, 4½d. nett, for Scotch and English deliveries (for export, 4¼d. nett, f.o.b. Glasgow); bichromate of soda, 3¼d. nett, for Scotch and English deliveries (for export, 3½d. nett, f.o.b. Glasgow); chlorate of potash, 4¼d. less 5%, Liverpool; nitrate of soda, 7s. 9d. to 8s.; sulphate of ammonia, £8. 7s. 6d. to £8. 10s. prompt, f.o.b. Leith; sal ammoniac, first and second white, £39. and £37. nett, any port;

sulphate of copper, £15. 15s. to £16., less 5%, Liverpool; paraffin scale, hard, 1¾d., and soft, 1½d. to 1½d. per lb.; paraffin wax, 120° semi-refined, 2¾d. to 2½d.; paraffin spirit (naphtha), 7½d. to 8d. per gallon; paraffin oil (burning) No. 1, 6½d., and crystal, 6¾d., at works, for Scotch buyers (English sales about ½d. lower); ditto (lubricating) 865° £5., 885° £5. 10s. to £6., and 890/895° £6. to £6. 10s. Week's imports of sugar at Greenock were 12,090 bags cane unrefined; 7,864 baskets cane unrefined; 12,115 bags beet unrefined; 10,400 bags beet refined.

### TYNE CHEMICAL REPORT.

TUESDAY.

There is a shade more business doing, and shipments, owing to the open season, continue to be made in fair volume. Caustic, 76/77°, £9. 5s. per ton; 70°, £7. 10s. to £7. 15s. per ton. Soda crystals, £2. 2s. 6d. per ton, gross weight. Sulphur scarce at £3. 17s. 6d. per ton. Other products unchanged—

Bleaching powder, softs, £7. 5s. per ton, nett; hards, £7. 10s. per ton, nett; caustic soda, 76/77°, £9. 5s. per ton, nett; do., 70°, £7. 15s. per ton, nett; recovered sulphur, 2 cwt. bags, £3. 17s. 6d. per ton, nett; soda ash, 48%, £3. 15s. per ton, nett; do., 52%, £3. 17s. 6d. per ton, nett; do., 56%, £4. per ton, nett; alkali, 36%, £2. 15s. per ton, nett; white alkali, 48%, £4. 10s. per ton, nett; do., 50%, £4. 15s. per ton, nett; do., 52%, £5. per ton, nett; hyposulphite of soda, 5-7 cwt. casks, £6. 5s. per ton, nett; do., 1 cwt. kegs, £7. per ton, nett; silicate of soda, 75° Tw., £2. 12s. 6d. per ton, nett; do., 100° Tw., £3. per ton, nett; do., 140° Tw., £3. 7s. 6d. per ton, nett; soda crystals, casks, £2. 2s. 6d. per ton, gross weight; do., 2 cwt. bags, £2. 2s. 6d. per ton, nett weight; chlorate of potash, 5d. per lb., less 6%; pearl hardening, £3. per ton, nett; pure white sulphate of alumina, £3. 17s. 6d. per ton, nett; blanc fixe, £7. 5s. per ton, nett; chloride of barium, refined crystals, £6. 15s., per ton, nett; do., 90/95%, crude calcined, £6. per ton, nett; sulphide of barium, crystals, £4. 15s. per ton, nett; carbonate of alumina, £30. per ton, nett; aluminate of soda, £30. per ton, nett.

SALT.—South Durham salt is steady: 9s. 6d. per ton, f.o.b. Tees, for common.

COALS.—There is practically no alteration in this market. Gas coals continue in good demand. Coke is also in fuller consumption. To-day's prices are:—Best Northumbrian steam, 7s. 9d. to 8s. per ton; second qualities, 6s. 9d. to 7s. per ton; small steam, 3s. 7½d. to 4s. per ton; bunker coals, 6s. 3d. to 6s. 6d. per ton; gas coals, 7s. to 7s. 6d. per ton; household coals, 10s. to 10s. 6d. per ton; coke, firm, 14s. to 15s. per ton.

### HULL PAINT, OIL, AND COLOUR REPORT.

TUESDAY.

OILS.—Prices are a little easier for seed oils, with the exception of rape oils, which continue scarce. The imports into Hull up to date (compared with the same time a year ago) have been:—Linseed, 60,413 quarters against 25,835 quarters. Rapeseed, 3,973 quarters, against 18,215 quarters. Cottonseed, 25,717 tons, against 35,918 tons. Olive oil, 1,001 casks, against 1,376 casks. Rape oil, 535 casks, against 1,177 casks. Oil cakes, 2,841 tons, against 2,057 tons. Tallow, 4,044 cwt., against 2,106 cwt. Bones, 572 tons, against 750 tons. Turpentine, 4,167 barrels, against 2,967 barrels. Linseed oil rather easier, closing quiet at 19s. 1½d. naked spot. February-April offer at 19s. and May-August at 18s. 10½d.; September-December, 18s. 7½d.; boiled and refined from £1. to £2. per ton extra. Export for the week, 640 cwt. Refined cotton oil has declined about 10s. per ton, closing quiet at 15s. 1½d. naked spot; February-April, 15s. 6d.; and May-August, 16s. 3d. Casks, £1., and ordinary barrels 30s. per ton extra. Export for the week, 3,940 cwt. Olive oil very depressed in value, and can be bought at £29. per tun. Turpentine unchanged. Castor oil, 2½d. per lb. for first pressure. Cod oil from £16. 10s. to £19. per ton. Neutral liquid soap, £16. per ton. Mineral oils have experienced a further advance of 10s. per ton, and an additional advance of 7s. 6d. may be expected almost immediately, judging from supply and demand. Locomotive grease, £12. per ton.

CAKES.—Linseed cakes in moderate demand; prices steady: 95% pure, £6. 5s. to £6. 7s. 6d. Oil cakes, £5. 5s.; Russians, £5. 17s. 6d. to £6. 2s. 6d. per ton. Cotton cakes remain quiet: best makes, £3. 11s. 3d.; seconds, £3. 6s. 8d. to £3. 10s. Rapeseed cakes: Black Sea, £2. 6s. 3d.; East India, £3. 6s. 3d. per ton.

PAINTS.—The trade is active, and prices unchanged. Dry mineral colours from £3. 10s. to £8. per ton. Ultramarines, 3lb. to 8d. per lb. White and red leads unchanged. Various coloured ordinary colours in oil from £11. per ton. Paint remover, 25s. per cwt. Ready-mixed paints, in tins, £24. Natural dubbin for belts, 12s. per gallon. Oak varnish, 5s. 6d. per gallon. Black varnish, £5. 10s. per ton, in barrels.



## New Companies.

**Huggin's Soap Works, Ltd.**—CAPITAL, £50,000., in £5. shares. This company has been formed to adopt an agreement with H. R. Bullock and carry on the business of manufacturers and dealers in soap, candles, tallow, oil, and glycerine. The subscribers to the memorandum of association are:—A. Poulter, 2, Gloster-road, Redhill, gentleman; W. O. Carter, 77, King William-street, E.C., secretary; E. A. Cleverton, 33, Lancaster-road, W., clerk; W. Key, 36, Penton-road, N., clerk; F. E. Judd, Church-road, Upper Norwood,

gentleman; G. Lyell, The Briars, Forest Gate, gentleman; W. Robinson, 26, Cargill-road, Earlfield, gentleman.

**Digestive Salt Syndicate, Ltd.**—CAPITAL, £10,000., in £1. shares. This company has been formed to carry on the business of salt and condiment manufacturers. The subscribers to the memorandum of association are:—R. G. Keston, Camperdown, Thornton Heath, gentleman; A. L. Reed, 8, The Orchard, Chiswick, barrister; D. Cavé, 100, Maida Vale, W., gentleman; D. Vinrace, M.R.C.S., 24, Alexander-square, S.W.; A. A. Strong, 4, Eastcheap, E.C., solicitor; J. B. Browett, New Beckenham, Kent, auctioneer; H. J. Wood, 19, Cook's-road, Kennington, clerk.

## IMPORTS OF CHEMICAL PRODUCTS AT THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

| LONDON.                              |                            |  | Dyestuffs—            |                           |  | Rosin—                      |                       |                             |
|--------------------------------------|----------------------------|--|-----------------------|---------------------------|--|-----------------------------|-----------------------|-----------------------------|
| <i>Week ending January 25th.</i>     |                            |  | Argols                |                           |  | Germany,                    | 8 cks.                | H. Lambert                  |
| <b>Acetic Acid—</b>                  |                            |  | Italy, 776 pks.       | B. Jacob & Sons           |  | <b>Saltpetre—</b>           |                       |                             |
| Holland, 50 pks.                     | Beresford & Co.            |  | Cochineal             |                           |  | Germany,                    | 200 kgs. 69 cks.      | P. Hecker & Co.             |
| " 16                                 | A. & M. Zimmermann         |  | Canaries, 52 pks.     | Knowles & Foster          |  | Calcutta,                   | 147 bgs.              | Lucas & Spencer's Wf., Ltd. |
| <b>Aluminium—</b>                    |                            |  | Cutch                 |                           |  | Germany,                    | 44 cks.               | J. Hall & Son               |
| Germany, £30                         | L & I D. Jt. Co.           |  | Rangoon, 22 pks.      | Arracan Co., Ltd.         |  | E. Indies,                  | 72 bgs.               | Perkins & Hauer             |
| <b>Ammonium Nitrate—</b>             |                            |  | E. Indies, 150        | Ross & Deering            |  | " 2,144                     | Lucas & Spencer's Wf. |                             |
| Germany, 11 pks.                     | Petri Brs.                 |  | Singapore, 800        | J. Swire & Sons           |  | <b>Soda—</b>                |                       |                             |
| <b>Aniline—</b>                      |                            |  | Rangoon, 372          | Leach & Co.               |  | France,                     | 20 c.                 | J. Burnett & Sons           |
| Germany, 10 pks.                     | G. S. N. Co.               |  | " 999                 | T. Ronaldson & Co.        |  | Germany,                    | 70                    | H. Lambert                  |
| <b>Anthracene—</b>                   |                            |  | " 350                 | G. S. N. Co.              |  | France,                     | 20                    | T. M. Duché & Sons          |
| France, 173 pks.                     | Burt, Boulton & Co.        |  | " 1,250               | Phillips & Graves         |  | <b>Soda Ash—</b>            |                       |                             |
| Holland, 77                          | "                          |  | " 75                  | W. H. Cole & Co.          |  | Germany, 2,060 c.           |                       | R. Waters                   |
| <b>Antimony Ore—</b>                 |                            |  | " 490                 | Brown & Elmslie           |  | <b>Sodium Hyposulphite—</b> |                       |                             |
| U. States, 66 t.                     | H. R. Merton & Co.         |  | Belgium, 473          | Bullock Brs. & Co.        |  | Germany, 186 pks.           |                       | F. Boehm                    |
| <b>Asbestos—</b>                     |                            |  | Rangoon, 50           | Weber & Smith             |  | Holland, 40                 |                       | Beresford & Co.             |
| Italy, £46                           | J. W. Harker               |  | Canaries, 10          | H. A. Litchfield & Co.    |  | <b>Sodium Sulphate—</b>     |                       |                             |
| Germany, 550                         | London Asbestos Co.        |  | Extracts              |                           |  | Holland, 22 pks.            |                       | H. Wallace & Co.            |
| Germany, 52                          | T. H. Lee                  |  | Canada, 200 pks.      | A. J. Humphrey            |  | " 17                        |                       | J. B. Westray & Co.         |
| Italy, 250                           | British Asbestos Co.       |  | France, 115           | Bennett S. S. Co.         |  | <b>Spent Oxide—</b>         |                       |                             |
| <b>Barium Chloride—</b>              |                            |  | Austria, 250          | Boucher, Mortimore & Co.  |  | Guernsey, £33               |                       | Gas Pur. & Cheml. Co.       |
| Germany, 67 pks.                     | Petri Brs.                 |  | Denmark, 25           | A. F. White & Co.         |  | <b>Starch—</b>              |                       |                             |
| Holland, 12                          | "                          |  | U. States, 3          | H. W. Peabody & Co.       |  | Holland, 40 pks.            |                       | Garey & Sons                |
| <b>Barytes—</b>                      |                            |  | Germany, 200          | T. H. Lee                 |  | Belgium, 78                 |                       | T. H. Lee                   |
| Belgium, 18 cks.                     | J. L. Lyon & Co.           |  | U. States, 75         | Skillbeck Brs.            |  | " 66                        |                       | F. Clayton & Co.            |
| " 61                                 | A. Zumbach & Co.           |  | Denmark, 1            | Sorensen & Co.            |  | France, 2                   |                       | A. Dunn                     |
| " 70                                 | Fleming's Oil Co., Ltd.    |  | <b>Gambier</b>        |                           |  | U. States, 100              |                       | Ohlenschlager Brs.          |
| Germany, 60                          | Perkins & Homer            |  | Singapore, 2,668 pks. | J. Swire & Sons           |  | Holland, 99                 |                       | Phillips & Graves           |
| Holland, 44                          | Union Lige. Co.            |  | " 103                 | Ross & Deering            |  | Belgium, 50                 |                       | Sawer, Sons, & Co.          |
| <b>Caoutchouc—</b>                   |                            |  | " 201                 | S. Barrow & Brs., Ltd.    |  | Germany, 144                |                       | Phillips & Graves           |
| U. States, 25 c.                     | Prop. Bull Wf.             |  | <b>Indigo</b>         |                           |  | France, 200                 |                       | B. & F. Wf. Co.             |
| Thursday Is., 7                      | "                          |  | E. Indies, 56 cmts.   | M. Smith                  |  | " 390                       |                       | W. E. Cole                  |
| Zanzibar, 6                          | Clarke & Smith             |  | " 28                  | Thomasset & Co.           |  | Belgium, 20                 |                       | E. & T. Pink                |
| Madagascar, 30                       | Procter Brs.               |  | " 40                  | P. Macfadyen & Co.        |  | " 550                       |                       | Leach & Co.                 |
| Rangoon, 14                          | L. & I D. Jt. Co.          |  | " 16                  | L. Achard & Co.           |  | Germany, 2,760              |                       | E. & T. Pink                |
| <b>Castor Oil—</b>                   |                            |  | " 19                  | Parsons & Keith           |  | Holland, 1,560              |                       | Horne & Co.                 |
| Italy, 20 cs.                        | A. & M. Zimmermann         |  | " 132                 | J. Owen                   |  | " 80                        |                       | Little & Johnston           |
| France, 40 brls.                     | Lucas & Spencer's Wf. Ltd. |  | " 13                  | Dipnall & Co.             |  | " 40                        |                       | Hernu, Peron, & Co.         |
| <b>Caustic Potash—</b>               |                            |  | " 105                 | P. & O. Co.               |  | " 480                       |                       | G. Rahn & Co.               |
| Belgium, 11 pks. 4 drs.              | Petri Brs.                 |  | " 64                  | Elkan & Co.               |  | <b>Stearine—</b>            |                       |                             |
| France, 20                           | Spies Brs. & Co.           |  | " 210 pks.            | A. B. Curtis & Co.        |  | Belgium, 63 bgs.            |                       | H. Hill & Sons              |
| " 40                                 | J. Knight & Sons           |  | " 42                  | Forbes, Forbes & Co.      |  | France, 61                  |                       | C. S. Lovell                |
| <b>Chemicals (otherwise undes.)—</b> |                            |  | " 20                  | Darling Brs.              |  | " 67                        |                       | H. Hill & Sons              |
| Germany, 1 ck.                       | Craven & Co.               |  | " 67                  | Arbuthnot, Latham & Co.   |  | " 100                       |                       | H. Walbaum & Tosetti        |
| Belgium, 9 pks.                      | T. Palmer & Co.            |  | " 9                   | Lyall, Anderson & Co.     |  | " 50                        |                       | Beck & Pollitzer            |
| " 4 cs. D. C. Thomas & Sons          |                            |  | " 37                  | H. W. Jewsbury & Co.      |  | <b>Tartaric Acid—</b>       |                       |                             |
| " 11                                 | O. Scholz & Co.            |  | " 34                  | Ralli Brs.                |  | Italy, 18 pks.              |                       | B. & F. Wf. Co.             |
| France, 16                           | Flageolet & Co.            |  | " 7                   | Wallace Brs.              |  | " 20                        |                       | F. C. Devon & Co.           |
| " 15                                 | Girard Frs. & Co.          |  | " 97                  | Montomerie & Co.          |  | Holland, 4                  |                       | W. V. Robinson & Co.        |
| Germany, 16                          | W. G. Blagden              |  | " 217                 | L. & I. D. Jt. Co.        |  | " 22                        |                       | Kirkpatrick & Co.           |
| Holland, 5                           | J. Owen                    |  | " 317                 | H. J. Perlbach & Co.      |  | " 2                         |                       | A. Taylor                   |
| Norway, 45                           | R. Greening                |  | <b>Madder</b>         |                           |  | " 15                        |                       | F. C. Devon & Co.           |
| Germany, 5                           | W. J. Fox                  |  | France, 3 pks.        | Skillbeck Brs.            |  | " 12                        |                       | B. & F. Wf. Co.             |
| Holland, 6                           | Beresford & Co.            |  | <b>Myrabolams</b>     |                           |  | France, 20                  |                       | W. C. Bacon & Co.           |
| Germany, 28                          | A. & M. Zimmermann         |  | E. Indies, 200 pks.   | J. Graves                 |  | <b>Ultramarine—</b>         |                       |                             |
| " 7                                  | Phillips & Graves          |  | 810                   | L. & I. D. Jt. Co.        |  | Holland, 2 cks.             |                       | Hermann, Keller, & Co.      |
| Holland, 67 cks.                     | R. Waters                  |  | <b>Orchella</b>       |                           |  | " 23 cks.                   |                       | J. Barber & Co.             |
| Germany, 38 pks. 25 cs.              | T. H. Lee                  |  | Shumac                |                           |  | Belgium, 2 brls.            |                       | J. L. Lyon & Co.            |
| <b>Cream of Tartar—</b>              |                            |  | Italy, 200 pks.       | H. Johnson & Sons         |  | " 24 pks.                   |                       | Steinhoff, Sons, & Co.      |
| France, 10 pks.                      | M. Ashby, Ltd.             |  | <b>Tanner's Bark</b>  |                           |  | <b>Varnish—</b>             |                       |                             |
| " 16                                 | W. C. Bacon & Co.          |  | Belgium, 25 t.        | Sawer, Sons & Co.         |  | Germany, 2 pks.             |                       | T. H. Lee                   |
| Spain, 5                             | Kirkpatrick & Co.          |  | Natal, 149            | A. & W. Nesbitt           |  | U. States, 10               |                       | Lunham & Moore              |
| Holland, 19                          | Fellows, Morton & Co.      |  | " 30                  | Boucher, Mortimore, & Co. |  | <b>Waste Salt—</b>          |                       |                             |
| Portugal, 12                         | "                          |  | <b>Turmeric</b>       |                           |  | Germany, 260 cks.           |                       | Humphery & Co.              |
| <b>Dextrine—</b>                     |                            |  | E. Indies, 500 pks.   | R. G. Hall & Co.          |  | <b>White Lead—</b>          |                       |                             |
| Holland, 10 pks.                     | H. Lorenz                  |  | 100                   | R. M. Cooke & Co.         |  | Germany, 12 cks.            |                       | H. B. Alder & Co.           |
|                                      |                            |  | <b>Valonia</b>        |                           |  | " 100                       |                       | Taylor Brs.                 |
|                                      |                            |  | A. Turkey, 56 t. £8   | M. D. Co.                 |  | Holland, 108                |                       | T. & W. Farnill & Co.       |
|                                      |                            |  |                       |                           |  | Belgium, 19                 |                       | J. L. Lyon & Co.            |
|                                      |                            |  |                       |                           |  | France, 19                  |                       | J. Wait & Son               |
|                                      |                            |  |                       |                           |  | Holland, 20                 |                       | A. & M. Zimmermann          |
|                                      |                            |  |                       |                           |  | Germany, 41                 |                       | Burrell & Co.               |
|                                      |                            |  |                       |                           |  | " 23                        |                       | Spies Brs. & Co.            |
|                                      |                            |  |                       |                           |  | Aus. Terr., 10              |                       | W. Adolph & Co.             |



|                     |                         |  |
|---------------------|-------------------------|--|
| <b>Wood Pulp—</b>   |                         |  |
| Holland, 1,474 pks. | E. J. & W. Goldsmith    |  |
| Canada, 3,480       | Henderson, Craig, & Co. |  |
| Sweden, 2,688       | Tough & Henderson       |  |
| Holland, 153        | H. Lambert              |  |
| Holland, 101        |                         |  |
| <b>Zinc Oxide—</b>  |                         |  |
| E. Indies, 60 cks.  | W. Balchin              |  |
| Sydney, 1,075 bgs.  | J. Greig                |  |
| U. States, 10 cks.  | M. Ashby, Ltd.          |  |

**LIVERPOOL.**

Week ending January 23rd.

|                                                |                             |  |
|------------------------------------------------|-----------------------------|--|
| <b>Acetate of Lime—</b>                        |                             |  |
| New York, 1,162 bgs.                           | W. S. Gray                  |  |
| <b>Aniline—</b>                                |                             |  |
| Paris, 1 ck.                                   | T. Edwards & Co.            |  |
| <b>Antimony—</b>                               |                             |  |
| Constantinople, 17 t. 10 c.                    |                             |  |
| <b>Asbestos—</b>                               |                             |  |
| Genoa, 32 pks.                                 |                             |  |
| <b>Asbestos (Crude)—</b>                       |                             |  |
| New York, 243 bgs.                             | S. W. Royse & Co.           |  |
| <b>Barytes—</b>                                |                             |  |
| Hamburg, 122 cks.                              |                             |  |
| Antwerp, 54                                    | 20 bgs.                     |  |
| <b>Bauxite—</b>                                |                             |  |
| Marseilles, 120 bgs.                           |                             |  |
| <b>Bone Ash—</b>                               |                             |  |
| Campana, 541 bgs.                              |                             |  |
| <b>Bone Meal—</b>                              |                             |  |
| Bombay, 2 215 bgs.                             |                             |  |
| Karachi, 4,300                                 |                             |  |
| <b>Boracic Acid—</b>                           |                             |  |
| Leghorn, 116 cks. 24 brls.                     |                             |  |
| <b>Boracite—</b>                               |                             |  |
| Panderna, 600 t.                               |                             |  |
| <b>Carbolic Acid—</b>                          |                             |  |
| Hamburg, 1 cs.                                 |                             |  |
| <b>Carbon Black—</b>                           |                             |  |
| Boston, 30 brls.                               |                             |  |
| <b>Castor Oil—</b>                             |                             |  |
| Bombay, 1,334 bgs.                             | E. D. Sassoon & Co.         |  |
| Marseilles, 24 brls.                           |                             |  |
| Leghorn, 2 cs.                                 | Hunt & Co.                  |  |
| Calcutta, 200                                  |                             |  |
| Leghorn, 30                                    | 4 hf. cts.                  |  |
| <b>Chloroform—</b>                             |                             |  |
| Hamburg, 13 cs.                                |                             |  |
| <b>Cottonseed Oil—</b>                         |                             |  |
| N. Orleans, 1,950 brls.                        |                             |  |
| <b>Dextrine—</b>                               |                             |  |
| Stettin, 30 bgs.                               |                             |  |
| <b>Dried Blood—</b>                            |                             |  |
| Campana, 223 bgs.                              |                             |  |
| <b>Dyestuffs—</b>                              |                             |  |
| Argols                                         |                             |  |
| Bordeaux, 4 cks.                               |                             |  |
| Gutch                                          |                             |  |
| Paris, 10 cs.                                  | T. Edwards & Co.            |  |
| Calcutta, 110 bxs.                             |                             |  |
| <b>Divi Divi</b>                               |                             |  |
| Hamburg, 65 bgs.                               |                             |  |
| <b>Extracts</b>                                |                             |  |
| New York, 5 brls.                              | W. Bingham                  |  |
| Philadelphia, 205 pks.                         |                             |  |
| New York, 34 cks. 358 bxs.                     | E. M. Schwerch              |  |
| Fiume, 468                                     |                             |  |
| Antwerp, 50 cks.                               |                             |  |
| <b>Fustic</b>                                  |                             |  |
| New York, 1,388 ps.                            | B. Ackerley & Son           |  |
| Tampico, 2,282                                 | Oetting & Co.               |  |
| " 13,892                                       | Gruning & Co.               |  |
| " 4,703                                        | H. Kendall & Sons           |  |
| Vera Cruz, 1 log                               | Rosing Bros. & Co.          |  |
| <b>Indigo</b>                                  |                             |  |
| Calcutta, 432 cts.                             |                             |  |
| Karachi, 2 cs.                                 |                             |  |
| <b>Myrabolams</b>                              |                             |  |
| Bombay, 484 bgs.                               | E. D. Sassoon & Co.         |  |
| <b>Orchella</b>                                |                             |  |
| Lisbon, 26 bgs.                                | A. Barbosa & Co.            |  |
| " 223 bls.                                     |                             |  |
| <b>Shumac</b>                                  |                             |  |
| Palermo, 600 bgs. 100 pks.                     |                             |  |
| " 420                                          | Bk. Bh. of N. America       |  |
| <b>Valonia</b>                                 |                             |  |
| Zante, 726 bgs.                                |                             |  |
| <b>Farina—</b>                                 |                             |  |
| Fiume, 120 bgs.                                |                             |  |
| <b>Glucose—</b>                                |                             |  |
| New York, 200 brls.                            |                             |  |
| Philadelphia, 100                              |                             |  |
| Hamburg, 60 cks.                               |                             |  |
| Boston, 500                                    |                             |  |
| <b>Glue—</b>                                   |                             |  |
| Marseilles, 26 cks. 55 bls. 4 cs.              |                             |  |
| Rouen, 33                                      | Co-op. W'sale Society, Ltd. |  |
| Rotterdam, 300 bgs.                            |                             |  |
| New York, 10 brls.                             | D. Moseley                  |  |
| Genoa, 9                                       | W. M. Newman                |  |
| Fiume, 20 bls.                                 |                             |  |
| <b>Infusorial Earth—</b>                       |                             |  |
| Hamburg, 49 bgs.                               |                             |  |
| <b>Lead Acetate—</b>                           |                             |  |
| Hamburg, 26 cks.                               |                             |  |
| <b>Limestone—</b>                              |                             |  |
| Antwerp, 1 cs.                                 |                             |  |
| <b>Manganese—</b>                              |                             |  |
| Bremen, 25 cks.                                |                             |  |
| Rotterdam, 12                                  |                             |  |
| <b>Manganese Ore—</b>                          |                             |  |
| Coquimbo, 1,724 t. 3 c.                        |                             |  |
| <b>Manganese Oxide—</b>                        |                             |  |
| Hamburg, 1 ck.                                 |                             |  |
| <b>Manure—</b>                                 |                             |  |
| Constantinople, 46 bgs.                        |                             |  |
| <b>Mica—</b>                                   |                             |  |
| New York, 12 brls.                             |                             |  |
| <b>Ochre—</b>                                  |                             |  |
| Marseilles, 17 brls.                           |                             |  |
| <b>Oxalic Acid—</b>                            |                             |  |
| Rotterdam, 5 cks.                              |                             |  |
| <b>Paraffin Scale—</b>                         |                             |  |
| Baltimore, 200 brls.                           |                             |  |
| Philadelphia, 93                               |                             |  |
| <b>Phosphate—</b>                              |                             |  |
| Dunkirk, 250 bgs.                              |                             |  |
| <b>Pitch—</b>                                  |                             |  |
| Hamburg, 86 brls.                              |                             |  |
| <b>Plumbago—</b>                               |                             |  |
| Genoa, 80 bgs.                                 |                             |  |
| <b>Potash—</b>                                 |                             |  |
| Dunkirk, 23 dms.                               | Bancroft & Co.              |  |
| <b>Potash Salts—</b>                           |                             |  |
| Hamburg, 102 bgs.                              |                             |  |
| <b>Potassium Silicate—</b>                     |                             |  |
| Hamburg, 2 brls.                               |                             |  |
| <b>Pumice Stone—</b>                           |                             |  |
| Messina, 18 cs. 15 bgs.                        |                             |  |
| <b>Pyrites—</b>                                |                             |  |
| Huelva, 5,446 t.                               | Matheson & Co.              |  |
| <b>Saltpetre—</b>                              |                             |  |
| Calcutta, 250 bgs.                             | Ralli Bros.                 |  |
| Hamburg, 50                                    | 2 cks. 116 kgs.             |  |
| <b>Soap—</b>                                   |                             |  |
| Marseilles, 5 cs.                              |                             |  |
| Hamburg, 3                                     |                             |  |
| Leghorn, 50                                    |                             |  |
| <b>Soapstone—</b>                              |                             |  |
| Bordeaux, 100 bgs. G. G. Blackwell, Sons & Co. |                             |  |
| <b>Sodium Nitrate—</b>                         |                             |  |
| Taital, 10,277 bgs.                            |                             |  |
| <b>Starch—</b>                                 |                             |  |
| Baltimore, 550 sks.                            |                             |  |
| Rotterdam, 80 cs.                              |                             |  |
| Antwerp, 96                                    | J. T. Fletcher & Co.        |  |
| " 120                                          |                             |  |
| <b>Stearine—</b>                               |                             |  |
| New York, 50 bds.                              |                             |  |
| Bordeaux, 70 pks.                              |                             |  |
| Antwerp, 13 bgs.                               | J. T. Fletcher & Co.        |  |
| " 80                                           |                             |  |
| <b>Sulphur—</b>                                |                             |  |
| Catania, 250 t. 29 cks. 490 bgs. 131 brls.     |                             |  |
| <b>Tallow—</b>                                 |                             |  |
| Baltimore, 250 tcs.                            |                             |  |
| Campana, 330 cks.                              |                             |  |
| Boston, 125 brls.                              |                             |  |
| <b>Tartar—</b>                                 |                             |  |
| Bordeaux, 19 cks.                              |                             |  |
| <b>Tartaric Acid—</b>                          |                             |  |
| Marseilles, 4 brls.                            |                             |  |
| Hamburg, 1 ck.                                 |                             |  |

|                       |                     |  |
|-----------------------|---------------------|--|
| <b>Tinical—</b>       |                     |  |
| Calcutta, 51 bgs.     |                     |  |
| <b>Treacle—</b>       |                     |  |
| Stettin, 174 cks.     | Brown, Geveke & Co. |  |
| Bordeaux, 20          | 4 cs.               |  |
| <b>Turpentine—</b>    |                     |  |
| Savannah, 3,073 brls. | Nickoll & Knight    |  |
| <b>Ultramarine—</b>   |                     |  |
| Bremen, 2 cks.        |                     |  |
| Rotterdam, 7          |                     |  |
| <b>Verdigris—</b>     |                     |  |
| Bordeaux, 3 cks.      |                     |  |
| <b>Waste Salt—</b>    |                     |  |
| Hamburg, 200 bgs.     |                     |  |
| <b>White Lead—</b>    |                     |  |
| Rotterdam, 50 cks.    |                     |  |
| Dunkirk, 110 brls.    |                     |  |
| <b>Wood Pulp—</b>     |                     |  |
| Rotterdam, 76 bls.    |                     |  |
| Gothenburg, 29        | M. Ralph & Co.      |  |
| " 130                 | F. E. Foulger       |  |
| <b>Zinc Oxide—</b>    |                     |  |
| New York, 80 brls.    |                     |  |
| Antwerp, 25           |                     |  |

**MANCHESTER.**

Week ending January 25th.

|                                 |                      |  |
|---------------------------------|----------------------|--|
| <b>Barytes—</b>                 |                      |  |
| Antwerp, 50 bgs.                |                      |  |
| <b>Castor Oil—</b>              |                      |  |
| Marseilles, 59 brls.            |                      |  |
| <b>Chrome Alum—</b>             |                      |  |
| Rotterdam, 5 cks.               |                      |  |
| <b>Colours—</b>                 |                      |  |
| Antwerp, 92 brls.               |                      |  |
| Paris, 1 ck. 4 cs.              |                      |  |
| Rotterdam, 22 13 77 brls.       |                      |  |
| " 12 bxs.                       |                      |  |
| <b>Dyestuffs—</b>               |                      |  |
| <b>Alizarine</b>                |                      |  |
| Rotterdam, 27 cks.              |                      |  |
| <b>Extracts</b>                 |                      |  |
| Antwerp, 5 brls.                |                      |  |
| Rotterdam, 10 cks.              |                      |  |
| <b>Indigo</b>                   |                      |  |
| Calcutta, 71 cts.               |                      |  |
| <b>Logwood</b>                  |                      |  |
| Laguna De Terminos, 7,680 qnts. | B. B. Watson & Co.   |  |
| " 331 t. 5c.                    | E. G. Jepson & Co.   |  |
| <b>Farina—</b>                  |                      |  |
| Hamburg, 650 bgs.               |                      |  |
| <b>Glue—</b>                    |                      |  |
| Antwerp, 20 bls.                |                      |  |
| Hamburg, 4 cks.                 |                      |  |
| <b>Limestone—</b>               |                      |  |
| Antwerp, 3 crts.                |                      |  |
| <b>Litharge—</b>                |                      |  |
| Rotterdam, 2 cks.               |                      |  |
| <b>Pitch—</b>                   |                      |  |
| Hamburg, 65 cks.                |                      |  |
| <b>Sodium Nitrate—</b>          |                      |  |
| Rotterdam, 22 cks.              |                      |  |
| <b>Starch—</b>                  |                      |  |
| Ghent, 98 cs.                   | J. T. Fletcher & Co. |  |
| " 18                            |                      |  |
| Antwerp, 232                    |                      |  |
| Hamburg, 163                    | 3 cks.               |  |
| Rotterdam, 40                   |                      |  |
| <b>Sulphuric Acid—</b>          |                      |  |
| Rotterdam, 10 crbys.            |                      |  |
| <b>Tallow—</b>                  |                      |  |
| Melbourne, 118 pps.             |                      |  |
| <b>Tin Perchloride—</b>         |                      |  |
| Antwerp, 10 cks.                |                      |  |
| <b>White Lead—</b>              |                      |  |
| Rotterdam, 3 cks.               |                      |  |
| <b>Wood Pulp—</b>               |                      |  |
| Skein, 6,069 bls.               | W. Gallagher & Son   |  |
| " 4,000                         |                      |  |
| Rotterdam, 51                   |                      |  |

**HULL.**

Week ending January 25th.

|                                          |                           |  |
|------------------------------------------|---------------------------|--|
| <b>Acid—</b>                             |                           |  |
| Bari, 8 cks.                             | Wilson, Sons, & Co., Ltd. |  |
| <b>Barytes—</b>                          |                           |  |
| Antwerp, 62 cks.                         | Bailey & Leatham          |  |
| Rotterdam, 23                            | Hutchinson & Son          |  |
| <b>Chemicals (otherwise undescribed)</b> |                           |  |
| Dunkirk, 58 pks.                         | Wilson, Sons, & Co., Ltd. |  |
| Antwerp, 56                              | W. & C. L. Ringrose       |  |
| Rotterdam, 1 ck.                         | Bailey & Leatham          |  |
| Hamburg, 11                              | Veltmann & Co.            |  |
| Bremen, 1 cs.                            | Wilson, Sons, & Co., Ltd. |  |
| <b>Cod Oil—</b>                          |                           |  |
| Bergen, 45 brls.                         | Wilson, Sons, & Co., Ltd. |  |
| <b>Colours—</b>                          |                           |  |
| Antwerp, 26 brls. 28 pks.                | Wilson, Sons, & Co., Ltd. |  |
| Hamburg, 2                               |                           |  |
| Stettin, 4 cks.                          | Wilson, Sons, & Co., Ltd. |  |
| Rotterdam, 16                            | 1 bx.                     |  |
| " 16 brls.                               | 19 107 pks.               |  |
| New York, 60                             | W. & C. L. Ringrose       |  |
| <b>Cottonseed Oil—</b>                   |                           |  |
| New York, 100 brls.                      | Wilson, Sons, & Co., Ltd. |  |
| <b>Cream of Tartar—</b>                  |                           |  |
| Rotterdam, 4 cks.                        | W. & C. L. Ringrose       |  |
| <b>Cryolite—</b>                         |                           |  |
| Copenhagen, 2 cks.                       | Wilson, Sons, & Co., Ltd. |  |
| <b>Dyestuffs—</b>                        |                           |  |
| <b>Alizarine</b>                         |                           |  |
| Rotterdam, 18 cks. 75 brls.              | W. & C. L. Ringrose       |  |
| <b>Extract</b>                           |                           |  |
| Fiume, 100 brls.                         | Wilson, Sons, & Co., Ltd. |  |
| <b>Fustic</b>                            |                           |  |
| Trieste, 6 bls. 5 t. 10 c.               | Wilson, Sons, & Co., Ltd. |  |
| <b>Indigo</b>                            |                           |  |
| Trieste, 1 cs.                           | Wilson, Sons, & Co., Ltd. |  |
| <b>Madder</b>                            |                           |  |
| Rotterdam, 7 cks.                        | W. & C. L. Ringrose       |  |
| " 2                                      | Hutchinson & Son          |  |
| <b>Sumac</b>                             |                           |  |
| Trieste, 174 bgs.                        | Wilson, Sons, & Co., Ltd. |  |
| Palermo, 3,215                           |                           |  |
| <b>Farina—</b>                           |                           |  |
| Hamburg, 100 bgs.                        | Wilson, Sons, & Co., Ltd. |  |
| " 50                                     | White & Son               |  |
| Stettin, 600                             | Wilson, Sons, & Co., Ltd. |  |
| Ghent, 198 cs.                           | "                         |  |
| <b>Gelatine—</b>                         |                           |  |
| Dunkirk, 5 cs.                           | Wilson, Sons, & Co., Ltd. |  |
| <b>Glucose—</b>                          |                           |  |
| Amsterdam, 60 bgs.                       | Hutchinson & Son          |  |
| New York, 200 brls.                      | Wilson, Sons, & Co., Ltd. |  |
| " 200                                    |                           |  |
| <b>Glue—</b>                             |                           |  |
| Rouen, 25 cs. 31 cks. 18 bls.            | Rawson & Robinson         |  |
| Dunkirk, 30                              | Wilson, Sons, & Co., Ltd. |  |
| Christiansund, 1 brl.                    | "                         |  |
| Fiume, 140 bgs.                          | "                         |  |
| Hamburg, 20                              | "                         |  |
| Rotterdam, 8 cks.                        | Hutchinson & Son          |  |
| Bremen, 111 bgs.                         | Veltmann & Co.            |  |
| <b>Manure—</b>                           |                           |  |
| Ghent, 2,856 bgs.                        | Wilson, Sons, & Co., Ltd. |  |
| <b>Ochre—</b>                            |                           |  |
| Rouen, 12 cks.                           | Rawson & Robinson         |  |
| <b>Paint—</b>                            |                           |  |
| New York, 17 cs.                         | Wilson, Sons, & Co., Ltd. |  |
| <b>Pitch—</b>                            |                           |  |
| Amsterdam, 27 cks.                       | Hutchinson & Son          |  |
| <b>Pumice Stone—</b>                     |                           |  |
| Messina, 80 pks.                         | Wilson, Sons, & Co., Ltd. |  |
| <b>Salt—</b>                             |                           |  |
| Rotterdam, 8 cks.                        | Bailey & Leatham          |  |
| <b>Saltpetre—</b>                        |                           |  |
| Hamburg, 135 bgs.                        | Wilson, Sons, & Co., Ltd. |  |



|                                                                                                                                                     |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <b>Soda</b> —<br>Rotterdam, 100 cks. W. Moran & Co.                                                                                                 |  |
| <b>Starch</b> —<br>New York, 250 bgs.<br>Antwerp, 40 cs. Bailey & Leatham<br>Rotterdam, 187 Hutchinson & Son<br>Amsterdam, 10 bxs. Hutchinson & Son |  |
| <b>Bremen</b> , 3,809 cs. Veltmann & Co.                                                                                                            |  |
| <b>Stearine</b> —<br>Antwerp, 9 bgs. Wilson, Sons, & Co., Ltd.                                                                                      |  |
| <b>Hamburg</b> , 130 pks. "                                                                                                                         |  |
| <b>Sulphur</b> —<br>Catania, 1,166 pks. Wilson, Sons, & Co., Ltd.                                                                                   |  |
| <b>Tallow</b> —<br>New York, 150 brls. Wilson, Sons, & Co., Ltd.                                                                                    |  |
| <b>Tartar</b> —<br>Bordeaux, 9 cks. Rawson & Robinson                                                                                               |  |
| <b>Tartaric Acid</b> —<br>Rotterdam, 2 cks. W. & C. L. Ringrose                                                                                     |  |
| <b>Hamburg</b> , 6 Bailey & Leatham<br>Rotterdam, 2 Hutchinson & Son                                                                                |  |
| <b>Treacle</b> —<br>New York, 1,615 brls. 1 cs. Wilson, Sons, & Co., Ltd.                                                                           |  |
| <b>Turpentine</b> —<br>Rouen, 53 brls.<br>Bordeaux, 2 cks. Rawson & Robinson                                                                        |  |
| <b>White Lead</b> —<br>Amsterdam, 61 cks. Hutchinson & Son                                                                                          |  |
| <b>Rotterdam</b> , 19 W. & C. L. Ringrose                                                                                                           |  |
| <b>Wolftram</b> —<br>Hamburg, 7 cs. Wilson, Sons, & Co., Ltd.                                                                                       |  |
| <b>Wood Pulp</b> —<br>Hango, 175 brls. J. Good & Sons<br>73 W. Shipstone & Co.                                                                      |  |
| <b>Zinc Ashes</b> —<br>Antwerp, 8 cks. Bailey & Leatham                                                                                             |  |
| <b>Zinc White</b> —<br>Rotterdam, 73 cks. W. & C. L. Ringrose                                                                                       |  |

**GLASGOW.***Week ending January 30th.*

|                                                             |  |
|-------------------------------------------------------------|--|
| <b>Acetate of Lime</b> —<br>Philadelphia, 910 bgs.          |  |
| <b>Arachide Oil</b> —<br>Rotterdam, 6 cks. J. Rankine & Son |  |
| <b>Barium Chloride</b> —<br>Rotterdam, 8 cks.               |  |
| <b>Barium Sulphate</b> —<br>Antwerp, 200 bgs.               |  |

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| <b>Barytes</b> —<br>Rotterdam, 27 cks. J. Rankine & Son                          |  |
| <b>"</b> , 135 pkgs.                                                             |  |
| <b>Bone Meal</b> —<br>Bombay, 5,908 bgs.                                         |  |
| <b>Castor Oil</b> —<br>Rotterdam, 86 cks.<br>Marseilles, 58 brls.<br>Antwerp, 29 |  |
| <b>Cottonseed Oil</b> —<br>New York, 5 brls.                                     |  |
| <b>Dyestuffs</b> —<br>Alizarine<br>Rotterdam, 12 brls. 1 bx. J. Rankine & Son    |  |
| <b>"</b> , 76 pkgs.                                                              |  |
| <b>Extracts</b><br>New York, 100 brls.                                           |  |
| <b>Rouen</b> , 25 15 cks                                                         |  |
| <b>Baltimore</b> , 335 t. 17 c.                                                  |  |
| <b>Logwood</b>                                                                   |  |
| <b>Jamaica</b>                                                                   |  |
| <b>Farina</b> —<br>Hamburg, 100 bgs.                                             |  |
| <b>Glucose</b> —<br>New York, 100 brls.<br>Philadelphia, 799                     |  |
| <b>Glue</b> —<br>Nantes, 20 brls.<br>Rotterdam, 60 bgs. J. Rankine & Son         |  |
| <b>Rouen</b> , 9 cks. 4                                                          |  |
| <b>Hamburg</b> , 40 bgs.                                                         |  |
| <b>Antwerp</b> , 16 9 cks.                                                       |  |
| <b>Manganese Chlorate</b> —<br>Rotterdam, 6 cks. J. Rankine & Son                |  |
| <b>Manganese Ore</b> —<br>Antwerp, 12 cks.                                       |  |
| <b>Manure</b> —<br>Rouen, 5 cks.                                                 |  |
| <b>Naphthol</b> —<br>Rotterdam, 1 bx. J. Rankine & Son                           |  |
| <b>Ochre</b> —<br>Marseilles, 23 brls.                                           |  |
| <b>Paint</b> —<br>New York, 6 brls.                                              |  |
| <b>Painters' Colours</b> —<br>Rotterdam, 2 bxs. 9 brls. J. Rankine & Son         |  |
| <b>Hamburg</b> , 6 cks.                                                          |  |
| <b>Danzig</b> , 10                                                               |  |
| <b>Antwerp</b> , 4                                                               |  |
| <b>Rotterdam</b> , 45 pkgs.                                                      |  |
| <b>Paraffin Wax</b> —<br>Baltimore, 200 brls.                                    |  |
| <b>Phosphates</b> —<br>Antwerp, 500 bgs.                                         |  |
| <b>Saltpetre</b> —<br>Hamburg, 50 kgs.<br>Calcutta, 1 bx.                        |  |
| <b>Soda</b> —<br>Rotterdam, 8 cks. J. Rankine & Son                              |  |

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| <b>Sodium Chlorate</b> —<br>Rouen, 10 cks.                                           |  |
| <b>Sodium Salicylate</b> —<br>Rotterdam, 1 cs. J. Rankine & Son                      |  |
| <b>Starch</b> —<br>New York, 150 cs. 100 bxs.<br>Amsterdam, 20                       |  |
| <b>Tallow</b> —<br>New York, 20 hhds.                                                |  |
| <b>Tartar</b> —<br>Cette, 1 ck.                                                      |  |
| <b>Treacle</b> —<br>Charente, 6 qt. cks.<br>Philadelphia, 402 brls. Waddell & Bryson |  |
| <b>Waste Salt</b> —<br>Hamburg, 355 bgs. 134 cks.                                    |  |
| <b>White Lead</b> —<br>Rotterdam, 89 cks. J. Rankine & Son                           |  |
| <b>Wood Pulp</b> —<br>Christiana, 764 bls.                                           |  |
| <b>Zinc Oxide</b> —<br>Antwerp, 25 cks.<br>Rotterdam, 10 J. Rankine & Son            |  |
| <b>Zinc White</b> —<br>Rotterdam, 25 cks. J. Rankine & Son                           |  |

**TYNE.***Week ending January 25th.*

|                                                        |  |
|--------------------------------------------------------|--|
| <b>Alum Earth</b> —<br>Hamburg, 34 cks. Tyne S. S. Co. |  |
| <b>Colours</b> —<br>Antwerp, 2 brls. Tyne S. S. Co.    |  |
| <b>Gelatine</b> —<br>Hamburg, 2 cs. Tyne S. S. Co.     |  |
| <b>Limestone</b> —<br>Antwerp, 5 crts. Tyne S. S. Co.  |  |
| <b>Pyrites</b> —<br>Huelva, 2,920 t. Scott Bros        |  |
| <b>Salt</b> —<br>Harburg, 200 t. Clephans & Wiencke    |  |
| <b>Starch</b> —<br>Rotterdam, 102 cs. Tyne S. S. Co.   |  |
| <b>Stearine</b> —<br>Antwerp, 4 bgs. Tyne S. S. Co.    |  |
| <b>Sulphur</b> —<br>Huelva, 2,072 t.                   |  |
| <b>Varnish</b> —<br>Antwerp, 5 kgs. Tyne S. S. Co.     |  |

**GOOLE.***Week ending January 22nd.*

|                                     |  |
|-------------------------------------|--|
| <b>Alkali</b> —<br>Calais, 5 cks.   |  |
| <b>Alum</b> —<br>Rotterdam, 50 bgs. |  |

|                                                                                                        |  |
|--------------------------------------------------------------------------------------------------------|--|
| <b>Colours</b> —<br>Ghent, 15 cks. 3 cs.<br>Hamburg, 25 7                                              |  |
| <b>Dyestuffs</b> —<br>Alizarine<br>Rotterdam, 81 brls.                                                 |  |
| <b>Extracts</b><br>Rouen, 25 cks.                                                                      |  |
| <b>Logwood</b><br>Jamaica, 448 t.                                                                      |  |
| <b>Madder</b><br>Rotterdam, 2 cks.                                                                     |  |
| <b>Dyestuffs (otherwise undescribed)</b><br>Rotterdam, 174 cks. 29 cs.<br>Boulogne, 5 14<br>Antwerp, 4 |  |
| <b>Farina</b> —<br>Hamburg, 100 bgs.                                                                   |  |
| <b>Glucose</b> —<br>Hamburg, 40 cks.                                                                   |  |
| <b>Phosphate</b> —<br>Ghent, 1,000 bgs.                                                                |  |
| <b>Potash</b> —<br>Rotterdam, 46 cks. 9 dms.<br>Calais, 16 50                                          |  |
| <b>Pyrites</b> —<br>Huelva, 3,331 t.                                                                   |  |
| <b>Saltpetre</b> —<br>Rotterdam, 305 bgs.<br>Hamburg, 21 cks.                                          |  |
| <b>Soda</b> —<br>Rotterdam, 1 ck.                                                                      |  |
| <b>Starch</b> —<br>Antwerp, 92 cs.                                                                     |  |
| <b>Wood Pulp</b> —<br>Hamburg, 80 bls.                                                                 |  |

**GRIMSBY.***Week ending January 25th.*

|                                                                       |  |
|-----------------------------------------------------------------------|--|
| <b>Caoutchouc</b> —<br>Hamburg, 8 cs.                                 |  |
| <b>Chemicals (otherwise undescribed)</b><br>Hamburg, 8 cs.            |  |
| <b>Colours</b> —<br>Antwerp, 2 cks.<br>Hamburg, 7<br>Rotterdam, 8     |  |
| <b>Dyes</b> —<br>Hamburg, 5 cks.<br>Rotterdam, 2<br>Antwerp, 48 pkgs. |  |
| <b>Dyestuffs</b> —<br>Indigo<br>Rotterdam, 3 chits.                   |  |
| <b>Dyestuffs (otherwise undescribed)</b><br>Dieppe, 28 cks.           |  |
| <b>Plumbago</b> —<br>Hamburg, 2 cks.                                  |  |
| <b>Saltpetre</b> —<br>Hamburg, 170 bgs.                               |  |
| <b>Starch</b> —<br>Antwerp, 80 cs.                                    |  |

**EXPORTS OF CHEMICAL PRODUCTS**

OF

**THE PRINCIPAL PORTS OF THE UNITED KINGDOM.****LONDON.***Week ending January 29th.*

|                                                                                                                                      |  |
|--------------------------------------------------------------------------------------------------------------------------------------|--|
| <b>Acids</b> —<br>Santos, 1 cs. £10<br>Bahia, 11 46<br>Delagoa Bay, 10 10                                                            |  |
| <b>Alkali</b> —<br>Geraldton, 3 t. 5 c. £8<br>Napier, 2 75<br>Oporto, 1 4 20<br>Rio de Janeiro, 1 8                                  |  |
| <b>Alum</b> —<br>Salonica, 5 t. 2 c. £30                                                                                             |  |
| <b>Ammonia</b> —<br>Melbourne, 12 cs. £16<br>Adelaide, 15 c. 12                                                                      |  |
| <b>Ammonium Carbonate</b> —<br>Yokohama, 2 c. £63<br>Rouen, 5 cks. 66<br>Melbourne, 1 8 11<br>Dunkirk, 1 t. 5 42<br>Cologne, 5 6 138 |  |

|                                                                                                                                                                                               |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <b>Ammonium Chloride</b> —<br>Rosario, 12 c. £22<br>Constantinople, 2 t. 10 25 brls. 181                                                                                                      |  |
| <b>Ammonium Nitrate</b> —<br>Piraeus, 14 cks. £64                                                                                                                                             |  |
| <b>Ammonium Sulphate</b> —<br>Ostend, 50 t. £450<br>Rotterdam, 20 176<br>Santos, 20 112<br>Martinique, 152 1,368<br>Palermo, 32 271<br>Ghent, 110 963<br>Hamburg, 100 1,000<br>Alicante, 3 30 |  |
| <b>Anhydrous Ammonia</b> —<br>Sydney, 70 cs. £650                                                                                                                                             |  |
| <b>Arsenic</b> —<br>Yokohama, 1 t. £16<br>Napier, 120 drs. 102                                                                                                                                |  |
| <b>Barium Chlorate</b> —<br>Rotterdam, 5 c. £21                                                                                                                                               |  |

|                                                                                                                                                 |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <b>Barium Nitrate</b> —<br>New York, 2 t. £36                                                                                                   |  |
| <b>Bleaching Powder</b> —<br>Natal, 18 c. £16                                                                                                   |  |
| <b>Borax</b> —<br>B. Ayres, 1 t. 4 c. £83<br>Bombay, 6 kgs. 19                                                                                  |  |
| <b>Carbon Bisulphide</b> —<br>Adelaide, 10 cs. £14                                                                                              |  |
| <b>Caustic Potash</b> —<br>Wanganui, 3 t. 4 c. £67                                                                                              |  |
| <b>Caustic Soda</b> —<br>Delagoa Bay, 13 c. £16<br>Rio de Janeiro, 1 t. 14 15<br>Algoa Bay, 11 18 289<br>Sydney, 3 48                           |  |
| <b>Chemicals (otherwise undescribed)</b><br>Melbourne, 35 cks. £56<br>Algoa Bay, 20 17 cs. 160<br>Adelaide, 1 t. 3 c. 28<br>Delagoa Bay, 1 8 24 |  |

|                                                                                                                                  |  |
|----------------------------------------------------------------------------------------------------------------------------------|--|
| <b>Dunkirk</b> , 5 16 200                                                                                                        |  |
| <b>Geraldton</b> , 14 14                                                                                                         |  |
| <b>Sarawak</b> , 3 45                                                                                                            |  |
| <b>Boulogne</b> , 1 10 145                                                                                                       |  |
| <b>Treport</b> , 5 15 200                                                                                                        |  |
| <b>Sydney</b> , 5 54                                                                                                             |  |
| <b>B. Ayres</b> , 4 7 99                                                                                                         |  |
| <b>Paranagua</b> , 12 kgs. 15 33                                                                                                 |  |
| <b>Citric Acid</b> —<br>Melbourne, 10 c. £77<br>Lisbon, 5 cks. 30<br>Rotterdam, 10 64<br>Sydney, 10 63<br>Hamburg, 2 35 kgs. 285 |  |
| <b>Coal Products</b> —<br>Alizarine<br>Bombay, 50 cks. £155<br>Sydney, 2 15                                                      |  |
| <b>Aniline Dyes</b><br>Calcutta, 1 cs. £80                                                                                       |  |
| <b>Aniline Oil</b><br>New York, 25 drs. £1,000                                                                                   |  |



|                                         |                    |                       |
|-----------------------------------------|--------------------|-----------------------|
| <b>Aniline Salts</b>                    |                    |                       |
| New York,                               | 66 cks.            | L500                  |
| <b>Anthraxene</b>                       |                    |                       |
| Cologne,                                | 30 cks.            | L138                  |
| <b>Benzol</b>                           |                    |                       |
| Amsterdam,                              | 41 drs.            | L486                  |
| Boulogne,                               | 9 cks.             | 54                    |
| Hamburg,                                | 62                 | 119                   |
| Rotterdam,                              | 103                | 50 runs. 12 puns. 866 |
| <b>Carbolic Acid</b>                    |                    |                       |
| Otago,                                  | 6 cks.             | L11                   |
| Antwerp,                                | 56                 | 61                    |
| Boston,                                 | 10                 | 20 drs. 121           |
| <b>Coal Tar Dyes</b>                    |                    |                       |
| Boston,                                 | 8 cks.             | L99                   |
| <b>Creosote</b>                         |                    |                       |
| Dieppe,                                 | 23,500 galls.      | L123                  |
| Treport,                                | 12 cks.            | 14                    |
| Alicante,                               | 4,086 hrls.        | 1,818                 |
| <b>Creosote Salts</b>                   |                    |                       |
| Philadelphia,                           | 1,471 bgs.         | L250                  |
| <b>Naphtha</b>                          |                    |                       |
| Melbourne,                              | 125 drs.           | L130                  |
| Boulogne,                               | 30 brls.           | 120                   |
| Treport,                                | 25                 | 61                    |
| <b>Nitro-Naphthaline</b>                |                    |                       |
| Brussels,                               | 3 cks.             | L27                   |
| <b>Pitch</b>                            |                    |                       |
| St. John's, N. B.                       | 100 brls.          | L31                   |
| Marseilles,                             | 925 t.             | 2,065                 |
| Cette,                                  | 600                | 1,140                 |
| Boston,                                 | 200 brls. 500 cks. | 419                   |
| Antwerp,                                | 3,875 t            | 5,476                 |
| Dunkirk,                                | 1,765              | 3,390                 |
| <b>Tar</b>                              |                    |                       |
| Algoa Bay,                              | 1,100 drs.         | L37                   |
| Natal,                                  | 250                | 12                    |
| New York,                               | 100 cks.           | 50                    |
| <b>Tar Oil</b>                          |                    |                       |
| Marseilles,                             | 6 cks.             | L10                   |
| <b>Tar and Pitch</b>                    |                    |                       |
| Sydney,                                 | 80 cks.            | L52                   |
| <b>Toluol</b>                           |                    |                       |
| Philadelphia,                           | 6 drs.             | L85                   |
| Rotterdam,                              | 57 runs.           | 200                   |
| <b>Coal Products (otherwise undes.)</b> |                    |                       |
| Napier,                                 | 80 drs.            | L70                   |
| Shanghai,                               | 20                 | 18                    |
| Sydney,                                 | 50 brls.           | 52                    |
| Melbourne,                              | 20                 | 15                    |
| <b>Copper Sulphate—</b>                 |                    |                       |
| Fremantle,                              | 1 t.               | L11                   |
| Marseilles,                             | 60                 | 1,080                 |
| Paris,                                  | 71                 | 10 c. 1,287           |
| Melbourne,                              | 5                  | 82                    |
| Sydney,                                 | 2                  | 24                    |
| Nelson,                                 | 1                  | 20                    |
| <b>Cream of Tartar—</b>                 |                    |                       |
| Sydney,                                 | 11 c.              | L48                   |
| Dunedin,                                | 5                  | 24                    |
| <b>Disinfectants—</b>                   |                    |                       |
| Algoa Bay,                              | 45 pkgs.           | L55                   |
| Natal,                                  | 24 cs.             | 39                    |
| Cape Town,                              | 2 t. 12 c.         | 23                    |
| Lyttelton,                              | 43 pkgs.           | 21                    |
| Melbourne,                              | 4                  | 31                    |
| <b>Magnesia—</b>                        |                    |                       |
| Valparaiso,                             | 1 t. 7 c.          | L52                   |
| <b>Magnesium Carbonate—</b>             |                    |                       |
| Yokohama,                               | 12 t. 10 c.        | L277                  |
| <b>Manure—</b>                          |                    |                       |
| Las Palmas,                             | 110 t. 18 c.       | L820                  |
| Chenil,                                 | 16 6               | 57                    |
| Havre,                                  | 25                 | 80                    |
| Rouen,                                  | 30                 | 115                   |
| Treport,                                | 9 18               | 140                   |
| <b>Nitric Acid—</b>                     |                    |                       |
| Melbourne,                              | 2 cks.             | L34                   |
| Jersey,                                 | 36 carboys         | 65                    |
| Guernsey,                               | 55                 | 82                    |
| <b>Phosphate—</b>                       |                    |                       |
| Higo,                                   | 10 t.              | L25                   |
| <b>Phosphorus—</b>                      |                    |                       |
| Adelaide,                               | 15 c.              | L98                   |
| <b>Potash—</b>                          |                    |                       |
| Melbourne,                              | 6 c.               | L40                   |
| Lyttelton,                              | 11                 | 34                    |
| <b>Potash Salts—</b>                    |                    |                       |
| Auckland,                               | 4 t.               | L486                  |
| <b>Potassium Cyanide—</b>               |                    |                       |
| Melbourne,                              | 25 cs.             | L316                  |
| Delagoa Bay,                            | 50                 | 724                   |
| Natal,                                  | 6 t. 2 c.          | 711                   |
| <b>Potassium Iodide—</b>                |                    |                       |
| Naples,                                 | 1 cs.              | L66                   |
| <b>Saltetre—</b>                        |                    |                       |
| Sydney,                                 | 5 c.               | L171                  |
| Melbourne,                              | 1 t.               | 22                    |
| Algoa Bay,                              | 11                 | 15                    |
| M. de Vileo,                            | 2 10               | 57                    |
| Rio de Janeiro,                         | 2 13               | 61                    |
| Montreal,                               | 3                  | 61                    |

|                            |        |         |             |
|----------------------------|--------|---------|-------------|
| <b>Sheep Dip—</b>          |        |         |             |
| E. London,                 | 28 t.  |         | 6550        |
| Cape Town,                 |        | 345 cs. | 100 drs. 84 |
| Algoa Bay,                 | 11     | 11 c.   | 349         |
| Christchurch,              |        |         | 250         |
| Delagoa Bay,               |        |         | 100 20      |
| M. Video,                  | 3      | 6       | 125         |
| B. Ayres,                  | 152    | 9       | 2,000       |
| Melbourne,                 | 5      |         | 120         |
| Sydney,                    | 3      | 1       | 80          |
| Dunedin,                   |        | 15      | 45          |
| <b>Slag—</b>               |        |         |             |
| Cape Town,                 | 50 t.  |         | £127        |
| <b>Soda—</b>               |        |         |             |
| Melbourne,                 |        | 1 c.    | 15          |
| Pt. Elizabeth,             | 5 t.   | 18      | £69         |
| Fremantle,                 | 1      |         | 23          |
| Singapore,                 | 4      | 5       | 23          |
| Adelaide,                  |        | 5       | 18          |
| <b>Soda Alkali—</b>        |        |         |             |
| Algoa Bay,                 | 3 t.   | 2 c.    | £27         |
| <b>Soda Ash—</b>           |        |         |             |
| Melbourne,                 | 25 t.  | 1 c.    | £112        |
| <b>Soda Crystals—</b>      |        |         |             |
| Algoa Bay,                 | 2 t.   | 18 t.   | £3          |
| Mauritius,                 |        | 19      | 6           |
| <b>Sodium Bicarbonate—</b> |        |         |             |
| Algoa Bay,                 | 7 t.   |         | £50         |
| Delagoa Bay,               | 2      |         | 15          |
| <b>Sodium Sulphate—</b>    |        |         |             |
| Ghent,                     | 120 t. |         | £120        |
| <b>Strontium Nitrate—</b>  |        |         |             |
| Boston,                    | 1 t.   |         | £24         |
| New York,                  | 5      | 1 c.    | 1.0         |
| <b>Sulphur—</b>            |        |         |             |
| Barbadoes,                 | 3 t.   | 15 c.   | £24         |
| E. London,                 |        |         | 50 cks. 44  |
| Algoa Bay,                 | 30     | 17      | 247         |
| <b>Sulphuric Acid—</b>     |        |         |             |
| Algoa Bay,                 | 1 t.   | 16 c.   | £16         |
| <b>Superphosphate—</b>     |        |         |             |
| Martinique,                | 210 t. |         | £630        |
| Mauritius,                 | 148    | 14 c.   | 535         |
| <b>Tartaric Acid—</b>      |        |         |             |
| Yokohama,                  | 1 t.   | 10 c.   | £18         |
| Sydney,                    | 1      |         | 174         |
| Algoa Bay,                 |        | 5       | 27          |
| Melbourne,                 |        | 2       | 15          |
| Nelson,                    |        | 3       | 24          |
| Auckland,                  | 15 cs. |         | 81          |

**LIVERPOOL.**

Week ending January 29th.

|                            |          |       |      |      |
|----------------------------|----------|-------|------|------|
| <b>Acetic Acid—</b>        |          |       |      |      |
| Lisbon,                    | 1 t.     | 19 c. | 2 q. | £11  |
| <b>Alkali—</b>             |          |       |      |      |
| Boston,                    | 151 cks. |       |      |      |
| <b>Alum—</b>               |          |       |      |      |
| Boston,                    | 29 l.    |       |      | £145 |
| Dunedin,                   | 4        | 1 c.  | 3 q. |      |
| Havana,                    | 4        |       |      | 20   |
| Oporto,                    | 5        | 6     |      | 27   |
| Casablanca,                | 1        | 5     | 2    | 26   |
| Syra,                      | 1        | 2     |      | 26   |
| Smyrna,                    | 4        | 13    |      | 25   |
| Halifax,                   | 2        | 2     | 2    | 10   |
| Malaga,                    | 5        |       |      | 25   |
| <b>Ammonium Carbonate—</b> |          |       |      |      |
| Hamburg,                   | 1 t.     |       |      | £34  |
| B. Ayres,                  | 4        | 6 c.  | 2 q. | 108  |
| Genoa,                     | 1        | 5     |      | 43   |
| <b>Ammonium Chloride—</b>  |          |       |      |      |
| Syra,                      | 9 c.     | 1 q.  |      | £11  |
| Piræus,                    | 0        |       |      | 6    |
| Bahia,                     | 2        | 1     |      | 21   |
| Philadelphia,              | 12 t.    | 2     | 1    | 291  |
| Montreal,                  | 1        | 2     |      | 26   |
| St. John, N.B.,            | 1        | 8     |      | 34   |
| Alexandria,                | 1        |       |      | 31   |
| Yokohama,                  | 10       |       |      | 37   |
| Genoa,                     | 5        |       |      | 9    |
| <b>Ammonium Sulphate—</b>  |          |       |      |      |
| Valencia,                  | 45 t.    | 14 c. | 2 q. | £37  |
| Genoa,                     | 30       |       | 2    | 351  |
| St. John, N.B.,            | 5        | 2     | 3    | 41   |
| Stettin,                   | 1        | 2     |      | 21   |
| New York,                  | 151      | 13    |      | 1,42 |
| Las Palmas,                | 45       | 18    |      | 404  |
| Ghent,                     | 49       | 10    |      | 581  |
| Palermo,                   | 10       | 4     |      | 120  |
| <b>Antimony Sulphate—</b>  |          |       |      |      |
| Boston,                    | 1 t.     | 3 c.  |      | £14  |
| <b>Asbestos—</b>           |          |       |      |      |
| M. Video,                  | 1 c.     |       |      |      |
| Pernambuco,                | 1        |       |      |      |
| Port Said,                 | 1        |       |      |      |
| Rio de Janeiro,            | 1        |       |      |      |

|                             |     |        |    |             |
|-----------------------------|-----|--------|----|-------------|
| <b>Aniline Salts</b>        |     |        |    |             |
| New York,                   | 140 | cs.    |    |             |
| Patras,                     | 1   |        |    |             |
| Piræus,                     |     |        | 15 | cks.        |
| Boston,                     | 53  |        |    |             |
| <b>Anthracene</b>           |     |        |    |             |
| Rotterdam,                  | 11  | cs.    |    |             |
| <b>Milbane Oil</b>          |     |        |    |             |
| New York,                   | 25  | cs.    |    |             |
| <b>Pitch</b>                |     |        |    |             |
| Cette,                      | 425 | t.     |    |             |
| Rotterdam,                  | 24  | brls.  |    |             |
| <b>Tar</b>                  |     |        |    |             |
| Cabenda,                    | 90  | cks.   |    |             |
| Kurrachee,                  | 20  |        |    |             |
| Philadelphia,               | 200 | brls.  |    |             |
| Piræus,                     | 3   |        |    |             |
| Sierra Leone,               | 10  |        |    |             |
| <b>Tar Oil</b>              |     |        |    |             |
| Copenhagen,                 | 5   | dms.   |    |             |
| <b>Cod Oil—</b>             |     |        |    |             |
| Barcelona,                  | 285 | brls.  |    |             |
| <b>Copper Sulphate—</b>     |     |        |    |             |
| Rouen,                      | 23  | l.     | 17 | c. £378     |
| Paris,                      | 5   |        | 3  | 79          |
| Odessa,                     | 2   |        | 3  | 35          |
| Alexandria,                 | 8   | 13     | 2  | 139         |
| Barcelona,                  | 6   | 19     | 1  | 106         |
| Palermo,                    | 5   |        | 1  | 84          |
| Algiers,                    | 17  | 18     | 2  | 291         |
| Bayonne,                    | 4   | 18     |    | 75          |
| Genoa,                      | 13  | 16     | 3  | 303         |
| Ancona,                     | 16  | 5      | 2  | 243         |
| B. Ayres,                   | 25  | 9      |    | 390         |
| Lisbon,                     | 12  | 1      | 2  | 190         |
| Gothenburg,                 | 5   |        |    | 74          |
| Bordeaux,                   | 4   | 18     |    | 72          |
| Brindisi,                   | 15  |        |    | 226         |
| Catania,                    | 11  | 10     |    | 178         |
| Seville,                    | 12  |        |    | 192         |
| Tampico,                    | 27  | 12     |    | 425         |
| Tarragona,                  | 37  | 3      |    | 592         |
| Venice,                     | 15  | 5      |    | 258         |
| Cette,                      | 402 | 12     |    | 7,629       |
| Naples,                     | 47  | 19     | 1  | 783         |
| <b>Copperas—</b>            |     |        |    |             |
| San Francisco,              | 13  | l.     | 35 | c. £26      |
| Melbourne,                  | 9   |        | 5  | 20          |
| <b>Disinfectants—</b>       |     |        |    |             |
| Rangoon,                    | 20  | cs.    |    | £40         |
| Calcutta,                   | 200 | galls. |    | 17          |
| <b>Dried Blood—</b>         |     |        |    |             |
| Boston,                     | 2   | l.     | 2  | c. £54      |
| <b>Farina—</b>              |     |        |    |             |
| Boston,                     | 3   | cks.   |    |             |
| Lisbon,                     | 2   |        |    |             |
| <b>Gelatine—</b>            |     |        |    |             |
| Boston,                     | 100 | bbs.   |    |             |
| New York,                   | 100 |        |    |             |
| <b>Glue—</b>                |     |        |    |             |
| Barcelona,                  | 15  | cks.   |    |             |
| Portland,                   | 1   |        |    |             |
| <b>Guano—</b>               |     |        |    |             |
| Malaga,                     | 30  | t.     |    | £270        |
| <b>Gypsum—</b>              |     |        |    |             |
| Boston,                     | 10  | t.     | 4  | c. 3 q. £20 |
| New York,                   | 37  | 10     |    | 180         |
| <b>Indigo Extract—</b>      |     |        |    |             |
| Philadelphia,               | 21  |        | 5  | c. 1 q. £72 |
| <b>Iron Liquor—</b>         |     |        |    |             |
| Lisbon,                     | 1   | l.     | 13 | c. 1 q. £12 |
| <b>Lead Acetate—</b>        |     |        |    |             |
| New York,                   |     |        | 4  | c. 2 q. £5  |
| <b>Lime—</b>                |     |        |    |             |
| Lagos,                      | 10  | t.     | 5  | c. 2 q. £16 |
| Old Calabar,                | 3   | cks.   |    |             |
| <b>Magnesia—</b>            |     |        |    |             |
| Havre,                      | 4   | cs.    |    |             |
| Para,                       | 1   |        |    |             |
| San Juan,                   | 3   |        |    |             |
| <b>Magnesium Carbonate—</b> |     |        |    |             |
| San Juan,                   | 4   | cs.    |    |             |
| <b>Magnesium Chloride—</b>  |     |        |    |             |
| Bombay,                     | 9   | t.     | 6  | c. £23      |
| <b>Magnesium Sulphate—</b>  |     |        |    |             |
| Pernambuco,                 | 45  | brls.  |    |             |
| Rio de Janeiro,             | 500 | kgs.   |    |             |
| <b>Manure—</b>              |     |        |    |             |
| Cherbourg,                  | 522 | t.     | 3  | c. £1,427   |
| Genoa,                      | 98  | 10     |    | 2 q. 295    |
| Marseilles,                 | 45  | 7      | 2  | 150         |
| <b>Ochre—</b>               |     |        |    |             |
| E. London,                  | 80  | brls.  |    |             |
| <b>Oxalic Acid—</b>         |     |        |    |             |
| Boston,                     | 3   | t.     | 5  | c. £105     |
| <b>Paint—</b>               |     |        |    |             |
| Algoa Bay,                  | 1   | ck.    |    |             |
| Ambriz,                     |     |        | 70 | kgs.        |
| Ambrizette,                 | 1   |        |    |             |
| Boma,                       | 2   |        |    |             |
| Bolama,                     | 3   |        |    |             |



|                                  |                             |                                  |                            |
|----------------------------------|-----------------------------|----------------------------------|----------------------------|
| Calcutta, 2 50                   | Old Calabar, 150            | Boston, 280 13 165               | Coquimbo, 2                |
| Callao, 18                       | Portland, 270               | B. Ayres, 75 brls. 100           | Genoa, 6 brls.             |
| Campana, 10 10                   | Pt. Natal, 9 16             | Calcutta, 41                     | Lisbon, 2 6 1 cks.         |
| Curacao, 52                      | Quillo, 100                 | Genoa, 300                       | Rio de Janeiro, 132 b s.   |
| Humacao, 10                      | Rio de Janeiro, 10          | Halifax, 14                      | Rotterdam, 9               |
| Ilo Ilo, 250                     | Rio Grande, 1 1             | Hamburg, 50 170                  | Smyrna, 10 dms.            |
| Lagos, 190                       | Do Sul, 1 1                 | Hong Kong, 22                    | <b>Waste Salt—</b>         |
| Loango, 1                        | S. John's, N.B., 250        | Manaos, 2 kgs. 10 brls.          | Melbourne, 1 t. 17 c.      |
| Manila, 10 760 2 brls.           | San Francisco, 310          | Melbourne, 724                   | <b>White Lead—</b>         |
| Manzanillo, 2                    | Sierra Leone, 57            | M. Video, 70                     | Algoa Bay, 120 dms.        |
| Matadi, 15                       | Sydney, 58                  | Newport News, 37                 | Ambrizette, 6 kgs.         |
| Old Calabar, 1 12 dms.           | Trinidad, 18                | Adelaide, 60 37                  | <b>Whiting—</b>            |
| New York, 5 tes. 1 cs.           | Valparaiso, 2 10            | Para, 4                          | M. Video, 50 brls.         |
| Para, 71                         | <b>Salt Cake—</b>           | Philadelphia, 1,668 347 tcs. 154 | <b>Zinc Chloride—</b>      |
| Port Natal, 316                  | Baltimore, 70 t. 14 c. £91  | New York, 7,182 350              | Oporto, 4 t. 16 c. 1 q. £6 |
| Progresso, 12 brls.              | <b>Saltpetre—</b>           | Puerto Cabello, 24               | Boston, 7                  |
| Rio de Janeiro, 2 330 469 dms.   | Callao, 10 c. 2 q. £12      | Rio de Janeiro, 150 brls. 9      |                            |
| 7 cs.                            | Therezina, 2 2              | Rotterdam, 50 kgs. 9             |                            |
| Rotterdam, 5                     | Parahyba, 2 2               | Seville, 10                      |                            |
| St. John's, Nfld., 1 cs.         | Callao, 1 t. 13 2 30        | Singapore, 181                   |                            |
| San Benito, 3                    | Cartagena, Sp., 6 4 1 109   | Sydney, 50                       |                            |
| Sandy Point, 21                  | <b>Sheep Dip—</b>           | Syria, 50                        |                            |
| Seville, 24                      | Sandy Point, 14 c. 3 q. £37 | <b>Soda Crystals—</b>            |                            |
| Shanghai, 40                     | Cape Town, 1 t. 5 41        | Alexandria, 70 brls. 20 cks.     |                            |
| Sherbro, 16                      | Algoa Bay, 2 10 94          | Algoa Bay, 280 kgs. 280          |                            |
| Sierra Leone, 60                 | M. Video, 15 11 470         | Bombay, 280 68                   |                            |
| Smyrna, 290                      | B. Ayres, 12 11 2,273       | Boston, 280                      |                            |
| Syria, 2                         | <b>Soap—</b>                | B. Ayres, 33                     |                            |
| Tampico, 4 3                     | Accra, 140 bxs.             | Calcutta, 40                     |                            |
| Valparaiso, 35                   | Aden, 100 60 dms. 1 cs.     | E. London, 20                    |                            |
| Vera Cruz, 12                    | Akassa, 100                 | Gibraltar, 25 75                 |                            |
| <b>Painters' Colours—</b>        | Alexandria, 1,370 2,690     | Halifax, 100                     |                            |
| Alexandria, 5 brls.              | Amboyna, 1,500              | Philadelphia, 100                |                            |
| Antwerp, 6 cks. 15 cs.           | Ambriz, 20                  | <b>Sodium Bicarbonate—</b>       |                            |
| Bahia, 35 kgs. 15 cs.            | Amsterdam, 50               | Adelaide, 50 kgs.                |                            |
| Bombay, 9                        | Auckland, 14                | Antwerp, 40                      |                            |
| Bremen, 250 bgs.                 | Baltimore, 30 2             | Baltimore, 150 25 cks.           |                            |
| B. Ayres, 9                      | Barbadoes, 935              | B. Ayres, 100 bgs. 100           |                            |
| Cabenda, 35                      | Bombay, 1,100 50 bds. 1     | Constantinople, 20               |                            |
| Calcutta, 10 6                   | Bordeaux, 50                | Dantzig, 25 2 brls.              |                            |
| Cape Town, 2 120 dms.            | Boston, 4 cks.              | E. London, 25 bgs.               |                            |
| Lisbon, 11 cs. 5 127 brls. 120   | Cabenda, 200 bds. 25        | Genoa, 100                       |                            |
| Manila, 3 2 10 100               | Calcutta, 200 bds. 25       | Halifax, 190 20                  |                            |
| Melbourne, 10 pks.               | Cameroon, 448               | Hamburg, 30 10 brls.             |                            |
| New York, 21                     | C. C. Castle, 50            | Hong Kong, 10 20 bgs. 4          |                            |
| <b>Paraffin Wax—</b>             | Cape Town, 753              | Malta, 20 bgs.                   |                            |
| Salonica, 10 cs.                 | Colon, 75                   | Marseilles, 35                   |                            |
| <b>Phosphorus—</b>               | Copenhagen, 40              | Melbourne, 767                   |                            |
| Ferrol, 1 c. £14                 | Corfu, 12                   | M. Video, 50                     |                            |
| Shanghai, 1 t. 3 230             | Curacao, 70                 | Nagasaki, 200                    |                            |
| <b>Plumbago—</b>                 | Dugama, 440                 | New York, 604 35                 |                            |
| B. Ayres, 7 cks.                 | Delagoa Bay, 175            | Paris, 175                       |                            |
| <b>Potash—</b>                   | Durban, 230                 | Rangoon, 40                      |                            |
| Rio Grande do Sul, 1 t. 5 c. £30 | E. London, 551 27           | Rostock, 2                       |                            |
| B. Ayres, 16 1 q. 19             | Gaboon, 380                 | Santos, 100                      |                            |
| <b>Potassium Bicarbonate—</b>    | Genoa, 220                  | Sydney, 50 18                    |                            |
| Vera Cruz, 1 t. 2 q. £16         | Gibraltar, 484              | Trieste, 18                      |                            |
| <b>Potassium Bichromate—</b>     | Grand Lahore, 40            | <b>Sodium Carbonate—</b>         |                            |
| Vera Cruz, 1 t. £40              | Half Jack, 50               | New York, 112 brls. 4            |                            |
| Rio de Janeiro, 19 c. 40         | Kurrachee, 5 200            | Boston, 50 kgs.                  |                            |
| Oporto, 5 5 221                  | Lagos, 2                    | Ghent, 50                        |                            |
| <b>Potassium Chlorate—</b>       | La Guayra, 559              | New York, 160                    |                            |
| Lisbon, 10 c. £20                | Las Palmas, 70              | Philadelphia, 100 74 dms.        |                            |
| Yokohama, 2 t. 10 100            | Lanzarote, 20               | Seville, 20 kgs.                 |                            |
| Philadelphia, 5 188              | Madras, 175 16              | New York, 98 cks.                |                            |
| Konigsberg, 1 10 31              | Manaos, 175 1               | San Francisco, 300               |                            |
| B. Ayres, 1 40                   | M. Video, 11 t. 13 c. 1     | <b>Sodium Silicate—</b>          |                            |
| Sydney, 1 142                    | Mussara, 946 bxs. 1         | Barcelona, 35 dms.               |                            |
| Boston, 3 15                     | Para, 400                   | Bombay, 7 5 brls.                |                            |
| Hiogo, 18 15 733                 | Parahyba, 625               | Malta, 15 cks.                   |                            |
| New York, 7 10 289               | Patras, 9                   | Melbourne, 23                    |                            |
| <b>Potassium Prussiate—</b>      | Penang, 70 1                | New York, 37                     |                            |
| Oporto, 2 c. £7                  | Philadelphia, 645 4         | Oporto, 15                       |                            |
| Bahia, 3 18                      | Pt. Natal, 4                | Sydney, 8                        |                            |
| <b>Salt—</b>                     | Rangoon, 4                  | Valencia, 35 300 bgs. 33         |                            |
| Accra, 8 t.                      | Rio de Janeiro, 10 50 cts.  | Zante, 33                        |                            |
| Akassa, 173                      | Rotterdam, 10               | <b>Starch—</b>                   |                            |
| Algoa Bay, 45                    | St. John's, Nfld., 10       | Iloilo, 2 cs.                    |                            |
| Amsterdam, 210                   | St. Lucia, 10               | <b>Sulphur—</b>                  |                            |
| Antwerp, 293                     | San Juan, 250               | Boston, 300 t. 9 c. £977         |                            |
| Bahia, 12                        | San Francisco, 30           | New York, 1 6                    |                            |
| Baltimore, 300                   | Shanghai, 4,827 2,932       | Pacasmayo, 1 13 2 q. 19          |                            |
| Banana, 50                       | Sierra Leone, 325           | <b>Sulphuric Acid—</b>           |                            |
| Batanga, 22 10 c.                | Singapore, 102              | Manaos, 5 c. £10                 |                            |
| Boma, 35 13                      | Ternali, 500                | Venice, 170 t. £300              |                            |
| Boma, 99                         | Trinidad, 800 40            | Cullera, 180 381                 |                            |
| Boston, 58                       | Victoria, 50                | Nantes, 188 8 c. 2 q. 338        |                            |
| B. Ayres, 930                    | Warri, 50                   | <b>Superphosphate—</b>           |                            |
| Calcutta, 1 1                    | <b>Soda—</b>                | Amsterdam, 30 brls.              |                            |
| Callao, 1 10                     | St. John's, Nfld., 3 cks.   | Antwerp, 60                      |                            |
| Cameroon, 33                     | <b>Soda Alkali—</b>         | Bremen, 8                        |                            |
| Coquimbo, 380                    | Adelaide, 20 brls.          | Ghent, 60 hf. pns.               |                            |
| Ghent, 100                       | Boston, 24                  | Hamburg, 10                      |                            |
| Halifax, 8                       | Genoa, 77                   | Rotterdam, 60                    |                            |
| Kinsebo, 5                       | Lisbon, 110                 | Terneuzen, 139                   |                            |
| Lagos, 100                       | Melbourne, 75               | <b>Turpentine—</b>               |                            |
| Landana, 10                      | <b>Soda Ash—</b>            | Iloilo, 50 dms.                  |                            |
| Loango, 95 1                     | Amsterdam, 50 bgs.          | Rotterdam, 3 brls.               |                            |
| Manaos, 28 12                    | Antwerp, 450 31 tcs.        | <b>Varnish—</b>                  |                            |
| Manoh, 15                        | Baltimore, 2,104 10 cks.    | Cape Town, 8 cs.                 |                            |
| Mauritius, 400                   | Bombay, 10 kgs.             |                                  |                            |
| Melbourne, 28                    | Bordeaux, 40                |                                  |                            |
| Muculla, 5                       |                             |                                  |                            |
| N. Orleans, 215                  |                             |                                  |                            |
| New York, 751 15                 |                             |                                  |                            |

## MANCHESTER

Week ending January 29th.

|                                           |                   |
|-------------------------------------------|-------------------|
| <b>Alkali—</b>                            | Malta, 2 cks.     |
| Treport, 34 kgs. 30 dms. 6 brls.          |                   |
| <b>Aniline Colours—</b>                   | Rotterdam, 2 cks. |
| <b>Chemicals (otherwise undescr.)</b>     |                   |
| Rio de Janeiro, 5 cks. 28 cs.             |                   |
| Rotterdam, 12 3 kgs.                      |                   |
| Alexandria, 20 100 brls.                  |                   |
| Antwerp, 10                               |                   |
| Hamburg, 6 bxs.                           |                   |
| <b>Coal Products (otherwise undescr.)</b> |                   |
| Antwerp, 335 t. 1 c.                      |                   |
| Bombay, 100 brls.                         |                   |
| Hamburg, 18                               |                   |
| Rotterdam, 562 cks.                       |                   |
| Treport, 13 dms.                          |                   |
| <b>Coal Tar Dyes—</b>                     |                   |
| Rio de Janeiro, 6 cs.                     |                   |
| Bombay, 6                                 |                   |
| Rotterdam, 1 kg.                          |                   |
| <b>Copper Sulphate—</b>                   |                   |
| Rio de Janeiro, 1 ck.                     |                   |
| <b>Copperas—</b>                          |                   |
| Rio de Janeiro, 15 brls.                  |                   |
| <b>Farina—</b>                            |                   |
| Antwerp, 24 sks.                          |                   |
| <b>Linseed Oil—</b>                       |                   |
| Alexandria, 5 brls.                       |                   |
| Beyrout, 14                               |                   |
| Tunis, 11                                 |                   |
| <b>Logwood—</b>                           |                   |
| Alexandria, 67 bgs.                       |                   |
| <b>Manure—</b>                            |                   |
| Valencia, 202 t. 8 c.                     |                   |
| <b>Painters' Colours—</b>                 |                   |
| Alexandria, 100 cks.                      |                   |
| Beyrout, 2 brls.                          |                   |
| Jaffa, 1                                  |                   |
| Rio de Janeiro, 2 10 bgs.                 |                   |
| <b>Salt—</b>                              |                   |
| Wilmington, 140 t.                        |                   |
| <b>Sheep Dip—</b>                         |                   |
| Adelaide, 75 dms.                         |                   |
| Brisbane, 100                             |                   |
| Sydney, 150                               |                   |
| <b>Soap—</b>                              |                   |
| Malta, 1 cs. 8 bxs.                       |                   |
| Treport, 197                              |                   |
| <b>Starch—</b>                            |                   |
| Gothenburg, 8 cks.                        |                   |
| <b>Tallow—</b>                            |                   |
| Rotterdam, 12 cks.                        |                   |
| <b>Turpentine—</b>                        |                   |
| Beyrout, 5 brls.                          |                   |
| <b>Varnish—</b>                           |                   |
| Melbourne, 4 cs.                          |                   |
| <b>Whiting—</b>                           |                   |
| Bombay, 4 cks.                            |                   |

## HULL.

Week ending January 25th.

|                           |                |
|---------------------------|----------------|
| <b>Alkali—</b>            | Bergen, 5 cks. |
| Constantinople, 100       |                |
| Palermo, 1                |                |
| <b>Ammonium Sulphate—</b> |                |
| Dunkirk, 996 bgs.         |                |
| Ghent, 245                |                |
| Rotterdam, 939            |                |



|                                          |                         |                |             |
|------------------------------------------|-------------------------|----------------|-------------|
| <b>Antimony—</b>                         |                         |                |             |
| Reval,                                   | 40 bxs.                 |                |             |
| <b>Benzol—</b>                           |                         |                |             |
| Rotterdam,                               | 118 cks.                |                |             |
| <b>Bleaching Powder—</b>                 |                         |                |             |
| Bombay,                                  | 34 cks.                 | 32 dms.        |             |
| New York,                                | 144                     |                |             |
| <b>Caustic Soda—</b>                     |                         |                |             |
| Bombay,                                  |                         | 10 dms.        |             |
| Christiania,                             |                         | 1 cs.          |             |
| <b>Chemicals (otherwise undes.)—</b>     |                         |                |             |
| Amsterdam,                               | 54 cks.                 |                |             |
| Antwerp,                                 | 4                       | 3 cs. 115 pks. |             |
| Bombay,                                  | 140                     |                |             |
| Bergen,                                  |                         | 10             |             |
| Christiania,                             | 13                      | 4              | 1,080 slbs. |
| Copenhagen,                              | 11                      |                |             |
| Dunkirk,                                 |                         | 1              |             |
| Fiume,                                   | 43                      |                |             |
| Gothenburg,                              | 40                      | 30             |             |
| Hamburg,                                 | 5                       | 176            |             |
| Harlingen,                               | 36                      |                |             |
| Hango,                                   | 5                       |                |             |
| Karrachee,                               |                         | 50 pks.        |             |
| New York,                                | 7                       |                |             |
| Reval,                                   |                         | 1              |             |
| Rotterdam,                               | 38                      | 100            |             |
| Rouen,                                   |                         | 20             | 135         |
| Stettin,                                 | 5                       |                |             |
| <b>China Clay—</b>                       |                         |                |             |
| Reval,                                   | 10 bgs.                 |                |             |
| <b>Cottonseed Oil—</b>                   |                         |                |             |
| Amsterdam,                               | 700 c.                  |                |             |
| Antwerp,                                 | 1,375                   |                |             |
| Bremen,                                  | 336                     |                |             |
| Drontheim,                               | 41                      |                |             |
| Gothenburg,                              | 100                     |                |             |
| Hamburg,                                 | 2,008                   |                |             |
| Rotterdam,                               | 1,597                   |                |             |
| Stettin,                                 | 100                     |                |             |
| Trieste,                                 | 400                     |                |             |
| <b>Dyestuffs (otherwise undescribed)</b> |                         |                |             |
| Christiania,                             | 25 bgs.                 |                |             |
| Harlingen,                               |                         | 1 cs.          |             |
| New York,                                |                         | 19 dms.        |             |
| Rotterdam,                               | 38 cks.                 |                |             |
| <b>Glue—</b>                             |                         |                |             |
| Hamburg,                                 | 2 bgs.                  |                |             |
| <b>Linseed Oil—</b>                      |                         |                |             |
| Antwerp,                                 | 10 c.                   |                |             |
| Alesund,                                 | 17                      |                |             |
| Bombay,                                  | 1,370                   |                |             |
| Bergen,                                  | 47                      |                |             |
| Christiania,                             | 132                     |                |             |
| Constantinople,                          | 10                      |                |             |
| Copenhagen,                              | 10                      |                |             |
| Christiansund,                           | 25                      |                |             |
| Drontheim,                               | 41                      |                |             |
| Hamburg,                                 | 382                     |                |             |
| Karrachee,                               | 120                     |                |             |
| Rotterdam,                               | 100                     |                |             |
| Stavanger,                               | 55                      |                |             |
| Trieste,                                 | 17                      |                |             |
| <b>Manure—</b>                           |                         |                |             |
| Venice,                                  | 770 t.                  |                |             |
| <b>Mineral White—</b>                    |                         |                |             |
| Bergen,                                  | 20 bgs.                 |                |             |
| Harlingen,                               | 300                     |                |             |
| <b>Paint—</b>                            |                         |                |             |
| Bombay,                                  | 6 cks.                  |                |             |
| <b>Painters' Colours—</b>                |                         |                |             |
| Antwerp,                                 | 20 cks. 2 dms. 232 pks. |                |             |
| Bombay,                                  | 115                     | 247 cs. 3,166  |             |
| Constantinople,                          |                         | 100            |             |
| Copenhagen,                              |                         | 1              |             |
| Ghent,                                   | 12                      |                |             |
| Hamburg,                                 |                         | 2              | 20          |
| Hango,                                   | 17                      | 4              |             |
| Karrachee,                               |                         |                | 102         |
| New York,                                | 27                      |                |             |
| Odessa,                                  | 212                     |                |             |
| Palermo,                                 |                         | 1              |             |
| Rotterdam,                               | 2                       |                |             |
| <b>Pitch—</b>                            |                         |                |             |
| Antwerp,                                 | 95 t.                   |                |             |
| Dunkirk,                                 | 159                     |                |             |
| <b>Soap—</b>                             |                         |                |             |
| Amsterdam,                               |                         | 1 cs.          |             |
| Bombay,                                  | 4 dms.                  |                |             |
| <b>Starch—</b>                           |                         |                |             |
| Constantinople,                          | 100 cs.                 |                |             |
| Odessa,                                  | 150                     |                |             |
| <b>Tallow—</b>                           |                         |                |             |
| Amsterdam,                               | 14 cks.                 |                |             |
| Bombay,                                  | 33                      |                |             |
| Gothenburg,                              | 5                       |                |             |
| Hango,                                   | 122                     |                |             |
| <b>Tar—</b>                              |                         |                |             |
| Amsterdam,                               | 3 cks.                  |                |             |
| Hamburg,                                 | 2                       |                |             |
| Rotterdam,                               | 7                       |                |             |

|                    |          |       |  |
|--------------------|----------|-------|--|
| <b>Turpentine—</b> |          |       |  |
| Bombay,            | 150 dms. |       |  |
| <b>Varnish—</b>    |          |       |  |
| Amsterdam,         | 1 ck.    |       |  |
| Antwerp,           |          | 1 cs. |  |
| Ghent,             | 3        | 2     |  |
| Palermo,           | 1        |       |  |

## GLASGOW.

Week ending January 30th.

|                                          |          |       |  |
|------------------------------------------|----------|-------|--|
| <b>Acetic Acid—</b>                      |          |       |  |
| Melbourne,                               |          | £32   |  |
| <b>Ammonia (Liquid)—</b>                 |          |       |  |
| B. Ayres,                                |          | £73   |  |
| <b>Ammonium Sulphate—</b>                |          |       |  |
| U.S.A.,                                  | 102 t.   | 17 c. |  |
| Hamburg,                                 | 50       | 14    |  |
| Bordeaux,                                | 5        |       |  |
| Calcutta,                                | 4        | 10    |  |
| Canada,                                  | 12       |       |  |
| <b>Bleaching Powder—</b>                 |          |       |  |
| Calcutta,                                | 56 t.    | 18 c. |  |
| Melbourne,                               | 7        | 13    |  |
| <b>Castor Oil—</b>                       |          |       |  |
| Adelaide,                                |          | £100  |  |
| <b>Caustic Soda—</b>                     |          |       |  |
| Seville,                                 | 10 t.    | 3½ c. |  |
| <b>Chloroform—</b>                       |          |       |  |
| Canada,                                  |          | £23   |  |
| <b>Coal Products—</b>                    |          |       |  |
| <b>Creosote</b>                          |          |       |  |
| U.S.A.,                                  | 242 t.   | 18 c. |  |
| <b>Naphtha</b>                           |          |       |  |
| Paris,                                   |          | £50   |  |
| Rouen,                                   |          | 23    |  |
| <b>Pitch</b>                             |          |       |  |
| Calcutta,                                |          | £34   |  |
| Havre,                                   |          | 700   |  |
| U.S.A.,                                  |          | 945   |  |
| Amsterdam,                               | 230 t.   |       |  |
| Leghorn,                                 |          | 667   |  |
| Cette,                                   | 1,455    | 10 c. |  |
| <b>Tar</b>                               |          |       |  |
| Rangoon,                                 |          | £33   |  |
| Christiania,                             | 70 brls. |       |  |
| Cadiz,                                   |          | 600   |  |
| <b>Hamburg,</b>                          | 46       |       |  |
| <b>Tar Oil</b>                           |          |       |  |
| Hamburg,                                 | 1 t.     | 2 c.  |  |
| Cette,                                   | 1 brl.   |       |  |
| <b>Cod Oil—</b>                          |          |       |  |
| Adelaide,                                |          | £54   |  |
| Melbourne,                               |          | 70    |  |
| <b>Cresylic Acid—</b>                    |          |       |  |
| New York,                                |          | £40   |  |
| <b>Dextrine—</b>                         |          |       |  |
| Melbourne,                               |          | £20   |  |
| <b>Disinfectants—</b>                    |          |       |  |
| Pt. Louis,                               |          | £25   |  |
| <b>Dyestuffs—</b>                        |          |       |  |
| Extracts                                 |          | £40   |  |
| Sydney,                                  | 100      |       |  |
| Victoria,                                |          | £28   |  |
| <b>Dyestuffs (otherwise undescribed)</b> |          |       |  |
| Calcutta,                                |          | £22   |  |
| Montreal,                                |          |       |  |
| <b>Linseed Oil—</b>                      |          |       |  |
| Pt. Louis,                               | 2 t.     | 8 c.  |  |
| Adelaide,                                | 3        | 2½    |  |
| Canada,                                  | 4        | 7½    |  |
| Durban,                                  |          | 4½    |  |
| Melbourne,                               |          | 18½   |  |
| Rio de Janeiro,                          |          | 19½   |  |
| Santos,                                  | 2        | 1½    |  |
| <b>Magnesium Sulphate—</b>               |          |       |  |
| Adelaide,                                |          | £27   |  |
| Santos,                                  | 4 t.     | 18 c. |  |
| <b>Manganese—</b>                        |          |       |  |
| Switzerland,                             | 12 t.    |       |  |
| Genoa,                                   | 1        | 13 c. |  |
| Rotterdam,                               |          | £120  |  |
| Canada,                                  |          | 11    |  |
| <b>Manure—</b>                           |          |       |  |
| Genoa,                                   | 49 t.    | 4½ c. |  |
| <b>Paint—</b>                            |          |       |  |
| Sydney,                                  |          | £116  |  |
| <b>Painters' Colours—</b>                |          |       |  |
| Cape Town,                               |          | £127  |  |
| Natal,                                   |          | 23    |  |
| Rangoon,                                 |          | 93    |  |
| Melbourne,                               |          | 61    |  |
| N. S. Wales,                             |          | 19    |  |
| Sydney,                                  |          | 20    |  |
| Adelaide,                                |          | 50    |  |
| Calcutta,                                |          | 390   |  |

|                              |       |        |  |
|------------------------------|-------|--------|--|
| <b>Paraffin Wax—</b>         |       |        |  |
| Antwerp,                     | £31   |        |  |
| Rouen,                       | 56    |        |  |
| Bordeaux,                    | 80    |        |  |
| Catania,                     | 12    |        |  |
| Fiume,                       | 45    |        |  |
| Genoa,                       | 499   |        |  |
| Leghorn,                     | 627   |        |  |
| Trieste,                     | 372   |        |  |
| Venice,                      | 146   |        |  |
| <b>Potash Salts—</b>         |       |        |  |
| Durban,                      | 6 t.  | 14½ c. |  |
| <b>Potassium Bichromate—</b> |       |        |  |
| Antwerp,                     | £162  |        |  |
| Melbourne,                   | 22    |        |  |
| Amsterdam,                   | 108   |        |  |
| Boston,                      | 82    |        |  |
| Canada,                      | 239   |        |  |
| Genoa,                       | 230   |        |  |
| Victoria, Aust.,             | 82    |        |  |
| <b>Rosin Oil—</b>            |       |        |  |
| Rotterdam,                   | £50   |        |  |
| Genoa,                       | 20    |        |  |
| <b>Sheep Dip—</b>            |       |        |  |
| Sydney,                      | £109  |        |  |
| <b>Soap—</b>                 |       |        |  |
| Algoa Bay,                   | 2 t.  | 4½ c.  |  |
| King Wm.'s Town,             | 14    |        |  |
| <b>Soda Crystals—</b>        |       |        |  |
| Melbourne,                   | 5 t.  | 2 c.   |  |
| <b>Sodium Bichromate—</b>    |       |        |  |
| Rouen,                       | 30 t. | 14½ c. |  |
| Genoa,                       | 11    | 2      |  |
| <b>Sulphuric Acid—</b>       |       |        |  |
| Rangoon,                     |       | £313   |  |
| <b>Tallow—</b>               |       |        |  |
| Transvaal,                   | 3 t.  |        |  |
| <b>Treacle—</b>              |       |        |  |
| Algoa Bay,                   | 2 t.  | 10 c.  |  |
| Christiania,                 | 18    | 12     |  |
| <b>Varnish—</b>              |       |        |  |
| Melbourne,                   |       | £10    |  |
| Santos,                      |       | 21     |  |
| <b>White Lead—</b>           |       |        |  |
| Adelaide,                    |       | £52    |  |
| Amsterdam,                   |       | 5      |  |
| Durban,                      |       | 50     |  |
| Jamaica,                     |       | 51     |  |

## TYNE.

Week ending January 25th.

|                          |        |       |  |
|--------------------------|--------|-------|--|
| <b>Alkali—</b>           |        |       |  |
| Copenhagen,              | 7 t.   | 8 c.  |  |
| Genoa,                   | 8      | 4     |  |
| <b>Antimony—</b>         |        |       |  |
| Bergen,                  |        | 2 c.  |  |
| Rotterdam,               | 1 t.   |       |  |
| New York,                | 45     |       |  |
| <b>Barium Binoxide—</b>  |        |       |  |
| Antwerp,                 | 10 t.  | 1 c.  |  |
| Venice,                  | 2      | 2     |  |
| Genoa,                   | 2      | 10    |  |
| <b>Barium Carbonate—</b> |        |       |  |
| New York,                | 100 t. |       |  |
| <b>Bleaching Powder—</b> |        |       |  |
| Antwerp,                 | 42 t.  | 6 c.  |  |
| Christiania,             | 15     | 2     |  |
| Gothenburg,              | 25     |       |  |
| Rotterdam,               | 30     | 3     |  |
| Copenhagen,              | 9      | 15    |  |
| Venice,                  | 5      | 3     |  |
| Drontheim,               | 7      | 8     |  |
| <b>Caustic Soda—</b>     |        |       |  |
| Antwerp,                 | 2 t.   | 14 c. |  |
| Christiania,             | 3      |       |  |
| Genoa,                   | 23     | 4     |  |
| Naples,                  | 3      | 15    |  |
| Aarhus,                  | 1      | 4     |  |
| Rotterdam,               | 16     | 2     |  |
| Copenhagen,              | 6      | 8     |  |
| Seville,                 | 33     | 18    |  |
| Bergen,                  | 3      | 11    |  |
| <b>Colours—</b>          |        |       |  |
| Genoa,                   |        | 12 c. |  |
| Naples,                  |        | 14    |  |
| Rotterdam,               |        | 2     |  |
| <b>Fluor Spar—</b>       |        |       |  |
| New York,                | 25 t.  | 12 c. |  |
| <b>Gelatine—</b>         |        |       |  |
| Bergen,                  |        | 9 c.  |  |
| <b>Guano—</b>            |        |       |  |
| Jersey,                  | 94 t.  | 4 c.  |  |
| <b>Iron Oxide—</b>       |        |       |  |
| Hamburg,                 | 1 ck.  |       |  |
| New York,                | 16 t.  | 7 c.  |  |
| <b>Litharge—</b>         |        |       |  |
| Hamburg,                 | 1 t.   | 16 c. |  |

|                    |        |       |  |
|--------------------|--------|-------|--|
| <b>Manure—</b>     |        |       |  |
| Cherbourg,         | 190 t. | 10 c. |  |
| Jersey,            | 114    | 11    |  |
| Guernsey,          | 200    | 9     |  |
| Venice,            | 350    |       |  |
| Genoa,             | 300    |       |  |
| <b>Ochre—</b>      |        |       |  |
| Christiania,       | 2 t.   | 3 c.  |  |
| Laurvig,           | 5      | 8     |  |
| <b>Paint—</b>      |        |       |  |
| Antwerp,           |        | 19 c. |  |
| Hamburg,           | 1 t.   | 10    |  |
| <b>Phosphorus—</b> |        |       |  |
| Seville,           | 1 t.   | 14 c. |  |
| <b>Plumbago—</b>   |        |       |  |
| Bergen,            |        | 4 c.  |  |
| <b>Soda—</b>       |        |       |  |
| Antwerp,           | 10 t.  | 4 c.  |  |
| Hamburg,           | 1      | 2     |  |
| Christiania,       | 10     |       |  |
| Aarhus,            | 3      | 15    |  |
| Gothenburg,        | 10     | 1     |  |
| Rotterdam,         | 25     | 2     |  |
| Venice,            | 10     | 5     |  |
| Ancona,            | 16     | 2     |  |

|                             |        |       |  |
|-----------------------------|--------|-------|--|
| <b>Soda Ash—</b>            |        |       |  |
| Venice,                     | 3 t.   | 5 c.  |  |
| Bergen,                     | 5      |       |  |
| Ancona,                     | 12     | 10    |  |
| <b>Sodium Hyposulphite—</b> |        |       |  |
| New York,                   | 45 t.  | 6 c.  |  |
| <b>Sodium Silicate—</b>     |        |       |  |
| Gothenburg,                 | 2 t.   | 10 c. |  |
| <b>Sodium Sulphate—</b>     |        |       |  |
| Porsgrund,                  | 290 t. |       |  |
| Venice,                     | 4      | 18 c. |  |
| Moss,                       | 545    |       |  |
| <b>Tallow—</b>              |        |       |  |
| Rome,                       | 8 t.   | 7 c.  |  |
| Milan,                      | 5      | 2     |  |
| <b>Varnish—</b>             |        |       |  |
| Naples,                     |        | 7 c.  |  |

## GOOLE.

Week ending January 22nd.

|                                          |          |       |  |
|------------------------------------------|----------|-------|--|
| <b>Benzol—</b>                           |          |       |  |
| Boulogne,                                | 25 cks.  |       |  |
| Rotterdam,                               | 144      |       |  |
| <b>Chemicals (otherwise undescribed)</b> |          |       |  |
| Hamburg,                                 | 133 bgs. |       |  |
| <b>Coal Products (otherwise undes.)—</b> |          |       |  |
| Boulogne,                                | 2 cs.    |       |  |
| Ghent,                                   | 5 cks.   |       |  |
| Rotterdam,                               | 775      |       |  |
| <b>Colours—</b>                          |          |       |  |
| Boulogne,                                |          | 1 cs. |  |
| Ghent,                                   | 2 tins   | 6     |  |
| Rotterdam,                               | 1 pkge.  |       |  |
| <b>Manure—</b>                           |          |       |  |
| Dunkirk,                                 | 96 bgs.  |       |  |
| Ghent,                                   | 226      |       |  |
| Rotterdam,                               | 955      |       |  |
| <b>Pitch—</b>                            |          |       |  |
| Antwerp,                                 | 561 t.   |       |  |
| Dunkirk,                                 | 240      |       |  |
| <b>Wood Pulp—</b>                        |          |       |  |
| Hamburg,                                 | 32 bls   |       |  |

## GRIMSBY.

Week ending January 25th.

|                                          |          |        |          |
|------------------------------------------|----------|--------|----------|
| <b>Alkali—</b>                           |          |        |          |
| Hamburg,                                 | 30 cs.   |        |          |
| Port au Prince,                          | 33 cks.  |        |          |
| <b>Chemicals (otherwise undescribed)</b> |          |        |          |
| Dieppe,                                  | 6 cks.   | 1 cs.  |          |
| Hamburg,                                 | 5        |        | 36 dms.  |
| Rotterdam,                               |          | 1      |          |
| <b>Coal Products (otherwise undes.)—</b> |          |        |          |
| Dieppe,                                  | 156 cks. |        |          |
| Hamburg,                                 |          | 1 cs.  | 12 pkgs. |
| Rotterdam,                               | 25       |        |          |
| <b>Colours—</b>                          |          |        |          |
| Dieppe,                                  | 2 pkgs.  | 2 dms. |          |
| Hamburg,                                 | 4 cks.   | 1 cs.  |          |
| Malmö,                                   |          | 2 tins |          |
| Port au Prince,                          | 39       | 42     |          |
| <b>Dyestuffs (otherwise undescribed)</b> |          |        |          |
| Dieppe,                                  | 10 cks.  |        | 1 pkge.  |
| <b>Manure—</b>                           |          |        |          |
| Hamburg,                                 | 500 bgs. |        |          |



## PRICES CURRENT.

WEDNESDAY, FEB. 5TH.

PREPARED BY MESSRS. HIGGINBOTTOM AND CO., 116, PORTLAND STREET, MANCHESTER.

*The values stated are F.O.R. at maker's works, or at usual ports of shipment in U.K. The price in different localities may*

**Acids :—**

| Acids:—                                    |                   | £    | s. | d.   |
|--------------------------------------------|-------------------|------|----|------|
| Acetic, 25 % and 40 % .. .. .              | per cwt.          | 6/   | &  | 9/-  |
| " Glacial... .. .                          | "                 |      |    | 10/- |
| Arsenic S.G., 2000° .. .. .                |                   | 0    | 17 | 6    |
| Fluoric .. .. .                            | per lb.           | 0    | 0  | 3½   |
| Muriatic (Tower Salts), 30° Tw. .. .. .    | per bottle        | 0    | 0  | 10   |
| (Cylinder), 30° Tw. .. .. .                | "                 | 0    | 3  | 0    |
| Nitric 80° Tw. .. .. .                     | per lb.           | 0    | 0  | 1½   |
| Nitrous .. .. .                            | "                 | 0    | 0  | 1½   |
| Oxalic .. .. .                             | nett              | 0    | 0  | 3½   |
| Phosphoric, 1750° .. .. .                  | "                 | 0    | 1  | 0    |
| Picric .. .. .                             | "                 | 0    | 0  | 11   |
| Sulphuric (fuming 50 %) .. .. .            | per ton           | 15   | 10 | 0    |
| " (monohydrate) .. .. .                    | "                 | 5    | 10 | 0    |
| " (Pyrites, 168°) .. .. .                  | "                 | 3    | 0  | 0    |
| " 150° .. .. .                             | "                 | 1    | 5  | 0    |
| " (free from arsenic, 145°) .. .. .        | "                 | 1    | 7  | 6    |
| Sulphurous (solution) S.G. 1025 .. .. .    | "                 | 3    | 0  | 0    |
| Tannic (pure) .. .. .                      | per lb.           | 0    | 1  | 0    |
| Tartaric .. .. .                           | "                 | 0    | 1  | 2½   |
| Arsenic, white powdered .. .. .            | nett per ton      | 16   | 15 | 0    |
| Alum (loose lump) .. .. .                  | "                 | 4    | 12 | 6    |
| Alumina Sulphate (pure) .. .. .            | "                 | 4    | 12 | 6    |
| Aluminoferic .. .. .                       | "                 | 2    | 7  | 6    |
| Aluminium .. .. .                          | per lb.           | 0    | 2  | 10   |
| Ammonia, Anhydrous .. .. .                 | "                 | 0    | 1  | 3    |
| " 880°=28° B. .. .. .                      | per lb.           | 0    | 0  | 3    |
| " =24° B. .. .. .                          | "                 | 0    | 0  | 2½   |
| " Carbonate .. .. .                        | nett              | 0    | 0  | 3½   |
| " Muriate.. .. .                           | per ton           | 22   | 15 | 0    |
| " (sal-ammoniac) 1st & 2nd .. .. .         | per cwt.          | 39/- | &  | 37/- |
| " Nitrate .. .. .                          | per ton           | 37   | 10 | 0    |
| " Phosphate .. .. .                        | per lb.           | 0    | 0  | 6½   |
| " Sulphate (grey) London .. .. .           | per ton           | 8    | 10 | 0    |
| " (grey) Hull .. .. .                      | "                 | 8    | 8  | 9    |
| Aniline Oil (pure) .. .. .                 | per lb.           | 0    | 0  | 8½   |
| Aniline Salt .. .. .                       | "                 | 0    | 0  | 7½   |
| Antimony .. .. .                           | per ton           | 30   | 0  | 0    |
| " (tartar emetic) .. .. .                  | per lb.           | 0    | 0  | 7½   |
| " (golden sulphide) .. .. .                | "                 | 0    | 0  | 10   |
| Barium Chloride .. .. .                    | per ton           | 6    | 7  | 6    |
| " Carbonate (native) .. .. .               | "                 | 3    | 10 | 0    |
| " Sulphate (native levigated) .. .. .      | "                 | 42/6 | to | 65/- |
| Bleaching Powder, 35 % .. .. .             | nett              | 7    | 0  | 0    |
| " Liquor, 7 % .. .. .                      | "                 | 3    | 10 | 0    |
| Bisulphide of Carbon .. .. .               | "                 | 12   | 10 | 0    |
| Chromium Acetate (crystal) .. .. .         | per lb.           | 0    | 0  | 6    |
| Calcium Chloride .. .. .                   | per ton           | 2    | 2  | 6    |
| China Clay (at Runcorn) in bulk .. .. .    | "                 | 15/- | to | 30/- |
| <b>Coal Tar Products and Dyes:—</b>        |                   |      |    |      |
| Alizarine (artificial) 20 % .. .. .        | nett per lb.      | 0    | 0  | 7¾   |
| Magenta .. .. .                            | "                 | 0    | 3  | 9    |
| Anthracene, 30 % A, f.o.b. London .. .. .  | per unit per cwt. | 0    | 0  | 11½  |
| Benzol, 90 % .. .. .                       | per gallon        | 0    | 2  | 0    |
| 50/90 .. .. .                              | "                 | 0    | 1  | 8½   |
| Carbolic Acid (crystallised 40°) .. .. .   | per lb.           | 0    | 0  | 7    |
| " (crude 60°) .. .. .                      | per gallon        | 0    | 1  | 10½  |
| Creosote (ordinary) .. .. .                | "                 | 0    | 0  | 1½   |
| " (filtered for Lucigen light) .. .. .     | "                 | 0    | 0  | 2    |
| Crude Naphtha 30 % @ 120° C. .. .. .       | "                 | 0    | 0  | 10   |
| Grease Oils, 22° Tw. .. .. .               | per ton           | 2    | 10 | 0    |
| Pitch, f.o.b. Liverpool or Garston .. .. . | "                 | 1    | 13 | 0    |
| Solvent Naphtha, 90 % at 160° .. .. .      | per gallon        | 0    | 1  | 6    |
| "Lucigen" and "Wells" Oils .. .. .         | "                 | 0    | 0  | 2½   |
| Copper .. .. .                             | per ton           | 43   | 16 | 3    |
| " Sulphate .. .. .                         | "                 | 16   | 10 | 0    |
| " Oxide (copper scales) .. .. .            | "                 | 41   | 10 | 0    |
| Glycerine (crude) .. .. .                  | "                 | 37   | 10 | 0    |
| " (distilled S.G. 1250°) .. .. .           | "                 | 75   | 0  | 0    |
| Iodine .. .. .                             | nett, per oz.     | 0    | 0  | 7½   |
| Iron Sulphate (copperas) .. .. .           | per ton           | 1    | 5  | 0    |
| " Sulphide (antimony slag) .. .. .         | "                 | 2    | 0  | 0    |
| Lead (sheet) for cash .. .. .              | "                 | 12   | 15 | 0    |
| " Litharge Flake (ex ship) .. .. .         | "                 | 14   | 0  | 0    |
| " Acetate (white .. .. .                   | "                 | 21   | 10 | 0    |
| " brown .. .. .                            | "                 | 16   | 0  | 0    |
| " Carbonate (white lead) pure .. .. .      | "                 | 16   | 0  | 0    |
| " Nitrate .. .. .                          | "                 | 19   | 0  | 0    |

|                                        |              |      |
|----------------------------------------|--------------|------|
| Lime, Acetate (brown) (ex ship)        | per ton      | 4 1  |
| " " (grey) (ex ship)                   | per ton      | 7 1  |
| Magnesium (ribbon and wire)            | per oz.      | 0    |
| " Chloride (ex ship)                   | per ton      | 2    |
| " Carbonate                            | per cwt.     | 1 1  |
| " Hydrate                              | per ton.     | 17   |
| " Sulphate (Epsom Salts)               | per ton      | 2 1  |
| Manganese, Sulphate                    | per cwt.     | 16 1 |
| " Borate                               | per cwt.     | 2 1  |
| " Ore, 70 %                            | per ton      | 3 1  |
| Methylated Spirit, 61° O.P.            | per gallon   | 0    |
| Naphtha (Wood), Solvent                | "            | 0    |
| " Miscible, 60° O.P.                   | "            | 0    |
| <b>Oils :—</b>                         |              |      |
| Cotton-seed                            | per ton      | 17 1 |
| Linseed                                | per ton      | 20 1 |
| Petroleum, American                    | per gallon   | 0    |
| Stearine                               | per ton      | 24   |
| Phosphorus (yellow)                    | per lb.      | 0    |
| " (red)                                | "            | 0    |
| Potassium (metal)                      | per oz.      | 0    |
| " Bichromate                           | per lb.      | 0    |
| " Carbonate, 90% (ex ship)             | per ton      | 17   |
| " Chlorate                             | per lb.      | 0    |
| " Cyanide, 98%                         | "            | 0    |
| " Hydrate (Caustic Potash) 90%         | per ton      | 24 1 |
| " " (Caustic Potash) 75/80%            | "            | 21 1 |
| " " (Caustic Potash) 70/75%            | "            | 20   |
| " Nitrate (refined)                    | per cwt.     | 1    |
| " Permanganate                         | per cwt.     | 3    |
| " Prussiate Yellow                     | per lb.      | 0    |
| " Sulphate, 90% (ex ship)              | per ton      | 9 1  |
| " Muriate, 80% (do.)                   | "            | 8 1  |
| Silver (metal)                         | per oz.      | 0    |
| " Nitrate                              | "            | 0    |
| Sodium (metal)                         | per lb.      | 0    |
| " Carb. (refined Soda-ash) 48%         | per ton      | 4 1  |
| " " (Caustic Soda-ash) 48%             | "            | 4 1  |
| " " (Carb. Soda-ash) 48%               | "            | 4 1  |
| " " (Alkali) 58%                       | "            | 3 1  |
| " " (Soda Crystals)                    | "            | 2 1  |
| " Acetate (ex-ship)                    | "            | 14 1 |
| " Arseniate, 45%                       | "            | 12 1 |
| " Chlorate                             | per lb.      | 0    |
| " Borate (Borax)                       | net, per ton | 19 1 |
| " Bichromate                           | per lb.      | 0    |
| " Hydrate (77% Caustic Soda) (f.o.b.)  | net pr. ton  | 9 1  |
| " " (74% Caustic Soda)                 | "            | 8 1  |
| " " (70% Caustic Soda)                 | "            | 7 1  |
| " " (60% Caustic Soda)                 | "            | 6 1  |
| " " (60% Caustic Soda, cream) (f.o.b.) | "            | 6 1  |
| " Bicarbonate                          | "            | 6 1  |
| " Hyposulphite                         | "            | 5 1  |
| " Manganate, 30%                       | "            | 16 1 |
| " Nitrate (95%) ex-ship Liverpool      | per cwt.     | 0 7  |
| " Nitrite, 98%                         | per ton      | 30 1 |
| " Phosphate                            | "            | 13 1 |
| " Silicate (glass)                     | per ton      | 4 1  |
| " " (liquid, 100° Tw.)                 | "            | 3 1  |
| " Stannate, 40%                        | per cwt.     | 3 2  |
| " Sulphate (Salt-cake)                 | per ton.     | 1 7  |
| " " (Glauber's Salts)                  | "            | 1 1  |
| " Sulphide                             | "            | 7 1  |
| " Sulphite                             | "            | 5 1  |
| Strontium Hydrate, 100%                | "            | 8 1  |
| Sulphocyanide Ammonium, 95%            | per lb.      | 0 0  |
| " Barium, 95%                          | "            | 0 0  |
| " Potassium                            | "            | 0 0  |
| Sulphur (Flowers)                      | per ton.     | 6 1  |
| " (Roll Brimstone)                     | "            | 5 0  |
| " Brimstone : Best Quality             | "            | 3 1  |
| Superphosphate of Lime (26%)           | "            | 2 7  |
| Tallow                                 | "            | 22 1 |
| Tin Crystals                           | per lb.      | 0 0  |
| " English Ingots                       | per ton      | 65 0 |
| Zinc (Spelter)                         | "            | 14 1 |
| " Chloride (solution, 100° Tw.)        | "            | 5 1  |



# THE CHEMICAL TRADE JOURNAL AND OIL, PAINT and COLOUR REVIEW.

Publishing Offices: 32, BLACKFRIARS STREET, MANCHESTER.

No. 456.

SATURDAY, FEBRUARY 15, 1896.

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SUBSCRIBERS ARE REQUESTED TO NOTE THAT THE

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WILL BE ISSUED WITH NO. 457, FEBRUARY 22, 1896.

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communications for the *Chemical Trade Journal* should be  
ed, and Cheques and Post Office Orders made payable to—

AVIS BROS., 32, Blackfriars Street, MANCHESTER.

Our Registered Telegraphic Address is—

"Expert, Manchester."

NATIONAL TELEPHONE 3060.

ers will oblige by making their remittances for subscriptions by  
or Post Office Order, crossed and payable to "Davis Bros."

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reach the office by Thursday morning at the latest.

## THE INLAND SEA-WATER SCHEME.

THERE is, we understand, a Bill of considerable interest  
that is to come before Parliament during the session  
that has opened this week, dealing with a proposal to supply  
the Metropolis with sea water for all general purposes, except  
drinking and cooking.

The idea at first sight appears very promising, especially  
from a sanitary point of view, but the subject has its "cons"  
as well as its "pros." It must be admitted that the majority  
of the evidence is favourable to the scheme, for the use of  
sea water has been in vogue in several towns, most of which  
report satisfactorily. Hastings seems to be the only excep-  
tion in this country, while we learn that the idea has been  
tried and abandoned in New York.

At Hastings the principle advantages are not questioned,  
the chief complaint being that the macadam roads are injured  
when watered with sea water, but there are other attendant  
circumstances that would appear to have something to do  
with this expression of opinion, as the Corporation have  
recently had some large surface water reservoirs that they are  
obliged to make use of, left on their hands.

The sanitary advantages to a city like London would be  
great. The facilities for sea baths in every house afford a  
tempting prospect. There are, however, other uses that  
suggest themselves, such as sewer flushing and street water-  
ing, and the saving in fresh water might, we think, enable  
greater care to be given to the drinking supply.

For flushing sewers we are inclined to think sea water has  
many advantages over ordinary fresh water. It is also well  
known that a proposal has been made to electrolyse sea  
water so as to form hypochlorites for the treatment of  
sewage. Though there are many doubts as to whether such  
a process is feasible for the entire treatment of sewage, it is  
safe to say that, with the constant growth of electrical power  
stations, it might not be altogether impracticable to contem-  
plate the periodical use of electrolysed sea water for flushing  
sewers, particularly in the summer time.

For street watering there seems to be a general consensus  
of opinion that it is greatly to be preferred to ordinary water,  
as it more effectually lays the dust and does not evaporate so  
quickly. This is only in accord with past experience, it being  
an acknowledged fact that calcium chloride and other salts  
have been tried with a view to rendering the watering of  
streets more lasting. Expense has been the chief drawback,  
and this does not appear to be such an important factor with  
sea-water, the estimated cost of the whole scheme, including  
the acquisition of the necessary lands for the distribution of  
the water throughout London, being only £450,000.

Exception has been taken it appears at Brighton to the use  
of sea water for this latter purpose, but both this town and  
Hastings, is known to be the seaside resort of the fastidious,



and their complaints do not weigh greatly against the favourable testimony of such places as Tynemouth, Barrow-in-Furness, Weymouth, Bournemouth, Blackpool and Torquay.

Thus the scheme from the sanitarian's point of view is most commendable, but there is little doubt that it will not be so welcome to the water companies.

There are, moreover, many other considerations to be taken into account. It is not easy to say off-hand how the change would affect manufacturing interests. Doubtless where the water supply is obtained from the water companies the old conditions might be left undisturbed, but the probable effects require careful looking into.

Another debatable point has been raised in the query as to whether sea-water would be all that is desirable for extinguishing fires. From one point of view a saline solution is greatly preferable to ordinary water as an extinguisher of fire, but it is likely to cause more damage to household effects and trade stock than fresh water. In the absence of special evidence to the contrary, we should be inclined to think the balance of the advantages would be on the side of salt water, as the damage done by water in the case of fire is generally irrevocable, and, if so, the water that will most speedily extinguish is the most desirable.

These are a few of the points that strike us in connection with this proposal, and they are not without interest to the trade, who will do well to follow the proceedings on this Bill when it comes before Parliament.

## MANCHESTER CORPORATION AND THEIR GAS RESIDUALS.

(Concluded from page 103.)

MR. THOMAS NEWBIGGING, civil engineer, and past president of the Gas Institute, also gave evidence favourable to the proposal of the Corporation. He had for many years, he said, advocated the policy of gas authorities manufacturing their residual products, and particularly of their converting the ammoniacal liquor into sulphate of ammonia, with the view of increasing the profits of the undertakings, and so reducing the price of gas. The lower the price of gas the more it would be used for cooking and heating purposes, and in this way a long stride would be taken in the direction of the abatement of the frequent recurrence of fogs which were so detrimental to health and life in our large towns. The process of manufacture of sulphate of ammonia was very simple and very profitable. It was a process that could be carried on without injury to health. He estimated that the profit from the manufacture of sulphate of ammonia at the Manchester Gasworks would be £4,183. per annum. Judging from the opposition that was being offered to the proposal, he would say that the manufacture was a very profitable one. He saw no reason why the Manchester Corporation should be debarred from engaging in a process which some three hundred gas authorities in the United Kingdom were at present engaged in.

Cross-examined: He would be surprised to learn that last year Messrs. Hardman and Holden, the present contractors for the ammoniacal liquor, made a large loss on this business. He would be surprised to learn that taking one year with another they had been content with a profit of 3 per cent.

Mr. Alderman Lloyd Higginbottom, deputy chairman of the Gas Committee, stated that up till last year, when the Committee advertised for tenders for ammoniacal liquor, several tenders were received, but last year only one firm tendered for the liquor produced at the two principal stations. The Committee felt that they were in one firm's hands, and that they were therefore in an awkward position. The tenders were all for one, two, and three years, but the Committee decided to accept the tender for only one year, in order that they might themselves make arrangements for working up the ammoniacal liquor. The City Council approved of the action of the Committee. As a member of the special sub-committee of the Gas Committee which had been deputed to inquire into the matter, he had visited Leicester, Beckton, and other places where sulphate plants were at work, and he had no doubt that in Manchester a plant could be worked at a profit.

Evidence against there being any nuisance was given by Dr. Bailey and Mr. C. Estcourt.

Mr. Charles Nickson, superintendent of the gas department of the Manchester Corporation, submitted statistics bearing on the question.

Messrs. Hardman and Holden, he said, had for the last fifteen or twenty years taken the liquor, the tar, the spent oxide, and a small portion of the coke produced at the works. In fifteen and a half years the firm's transactions with the Corporation had come to £682,000., or an average of about £44,000. a year.

Mr. Sutton, in opening the case for the opponents of the proposal, pointed out that there was absolutely no evidence to show that the Corporation was in an advantageous position to work up its tar. And as to the sulphate plant, he would call Colonel Sadler and other competent witnesses to prove that the figures which had been submitted were absurdly and absolutely wrong. In any case the evidence had been entirely unsatisfactory, and such powers as were asked ought not to be granted unless it could be shown that the public advantage would counterbalance the inconvenience and destruction of capital that would be occasioned to ratepayers engaged in the trade. Messrs. Hardman and Holden, as he would prove, had a far better chance than the Corporation of dealing successfully with this business.

Colonel Sadler, managing director of Sadler and Co., Limited, Middlesbrough, said he had had 30 years' experience as a chemist in connection with the distillation of tar and ammoniacal liquor. His experience told him that sulphuric acid and sulphate of ammonia plant such as it was proposed to provide would cost at least £33,000., instead of the £20,000. or £25,000. estimated by the Corporation. He considered that the wages and other items in the cost of sulphuric acid had been very much understated. Its cost per ton of sulphate would be at the very least 25s. 2d., instead of 14s. 3d. as stated by Mr. Stevenson; and the total cost of producing and selling sulphate per ton he made out to be £4. 10s. 1d., exclusive of the liquor employed. In the light of his figures he estimated that the proposed manufacture of sulphate by the Manchester Corporation would result in a loss equal to 25s. 7d. per ton of sulphate, or a total loss of £5,116. per annum. Mr. Stevenson had estimated that he would sell his sulphate at £9. per ton, but it was a very considerable time since that price was obtainable.

Mr. Sutton here asked if the Corporation intended to go forward with their application for powers to distil tar. Mr. Hudson said the Corporation did not intend to distil tar at present, but they sought the same general powers as other municipalities. Mr. Sutton objected to such general powers being given merely because other towns had got them, and asked for the inspector's direction on the point.

The Inspector said Mr. Sutton had better make his case against the Corporation's proposal as strong as he could, seeing that general powers were sought.

Colonel Sadler was then examined with regard to the difficulties and complexities of the trade in tar. He said that the tar, at one time cast out as valueless, now yielded some sixty or more products, many of them of great value, and the distillation of these products was very difficult and very risky.—Cross-examined: He did not suggest that in proper hands tar manufacture was not a profitable business. But the business was full of risks, and under no circumstances could he recommend a corporate body to go into it. He admitted that if a Corporation had power to distil the tar and was thus in a position to hold a rod in *terrorem* over the heads of the tar distillers better prices might possibly be obtained than by Corporations that had no such power. Apart from a specialty which they had and which enabled them to get more than merely the sulphate out of the ammoniacal liquor, he feared that Hardman and Holden were at present making a loss on sulphate manufacture; and he supposed the reason they were now opposing the Corporation's proposal was because they were hoping for better times. He knew the sulphuric acid plant had come down in price during the past 15 years, but he still believed that a plant such as was required would cost £20,000.

Mr. Holden, chairman of the directors of Hardman, Holden, and Co., chemical manufacturers, Miles Platting, submitted figures with a view of showing that the Corporation witnesses had very much underestimated the cost of making the sulphuric acid and the sulphate of ammonia. He also gave figures to show that Manchester had been receiving more from the sale of its ammoniacal liquor than the other towns mentioned derived from working up their liquor. In consequence of the fluctuations of the market his company last year lost £3,092. 19s. 5d. on the manufacture of sulphate. During the whole time he had been engaged in that manufacture his profits had only come to 3 to 3½ per cent. on the turnover of sulphate. His Company had given an exceedingly good price for the tar during the years it had obtained it—generally from 3s. to 4s. per ton more than the price quoted in the open market. The reason the Company did not get the tar contract last year was because somebody else made a higher offer. His Company's offer would have been larger but for the fear that the quality would not be up to the mark. In the previous year the quality was low, and although the Corporation made some allowance for that, they distinctly stated that they recognised no legal liability. And he thought that, in the event of coal reaching a high price, there might be a recurrence of such trouble. His Company some years ago erected an alizarine plant at a cost of between £30,000. and



£35,000. For two years the alizarine business was profitable, but now it was not so, and for seven years the plant had been practically idle and valueless. In like manner the chemical trade underwent vicissitudes as to other processes. The discoveries were so frequent that they never knew what would happen from one year's end to another. The Company had one chemist who was engaged in research work alone.—In cross-examination, Mr. Holden admitted that in estimating the cost of the sulphate he had included "salaries," which item, as to three-eighths of it, was made up of the salaries of the managing director and directors. That would have to be deducted from the estimate, in view of the fact that the members of the Corporation, who were in a position corresponding to that of the directors, were not paid for their work. He denied that the market price of sulphuric acid was 23s. 6d. per ton, as stated in a technical journal, or 1s. 6d. per ton less than he gave as the cost of manufacture. The trade journals were often wrong as to prices. Mr. John Craven, of Hardman and Holden's, gave evidence corroborative of that of Mr. Holden.—This concluded the evidence, and the Commissioner was then addressed by Mr. Sutton on behalf of the opponents of the application, and by Mr. Hudson for the Corporation.—At the close of the inquiry Colonel Ducat visited the site of the proposed sulphate works.

### CHEMICAL INDUSTRY IN ALICANTE.

CONSIDERING the size and commercial importance of the province of Alicante, the chemical industries occupy a prominent position.

One of the most important is that of soap-making. Of the twenty-nine works that exist there are twenty-seven at work. These are chiefly situated round the towns of Alicante, San Vicente, Alcoy, Villena, Monovar, Novelda, Elche, Crevillente, and Callera. The combined yearly production of these twenty-seven works is twelve-and-a-half million pounds of soap.

The next most important industry is the extraction of oils. This process is carried out in two ways, viz., by extraction with a chemical solvent and by expression pure and simple in hydraulic presses. There are twenty-seven works in operation in connection with the latter method, the chief of which are situated at Biar, Villena, Alcoy, Muro, Elche, Elda, Novelda, Monovar, Villajoyosa, and Ces. These seed-crushing mills employ 200 workmen. The chemical extraction with carbon bisulphide is carried on to a much more limited extent. There is only one works in operation, and that is situated at Alicante. The amount of oil extracted every year is about 500 tons.

There is another branch of the oil trade represented in Alicante in the shape of two petroleum refineries. Their combined annual production is very considerable, being estimated to be worth £14,000. The number of workmen employed is 120. The wages vary from 1s. 3d. to 4s. 2d. per day.

### THE GERMAN CEMENT INDUSTRY.

THERE are some 63 cement works in the whole of Germany. The Rhine is the principal centre for this manufacture, but in the neighbourhood of Hamburg there are three or four in operation for the production of the article. The annual production of Germany amounts to nearly 11,000,000 barrels, giving employment to some 1,800 hands, whose annual earnings amount to some £698,780. The largest customers for this article in Europe are Russia and Norway, and of Transatlantic countries, the United States, Brazil, Chili, and Venezuela. The exportation to Great Britain and British possessions is comparatively small. The following table gives approximately the quantity and value exported to European and other countries:—

| Country.            | Cwts.     | £       |
|---------------------|-----------|---------|
| Norway .....        | 58,500    | 6,700   |
| Russia .....        | 34,353    | 2,900   |
| United States ..... | 1,386,872 | 168,000 |
| Brazil .....        | 446,340   | 40,200  |
| Chili .....         | 131,000   | 13,000  |
| Venezuela .....     | 103,000   | 9,800   |

### FLOW OF PETROLEUM IN LAMPS.

HERR A. J. STEPANOW has been investigating the working of petroleum in a lamp. He finds that the flow of the oil in the wick does not depend on the specific gravity of the oil, but on the square of the capillarity-constant directly; and on the viscosity of the oil inversely. The capillarity-constant is much the same for different oils, and is very nearly proportional, for oils from the same source, to

the specific gravity. The viscosities of different oils are, on the other hand, very different; they increase with the specific gravity of oils from the same source, and diminish with increased temperature. A heavier Baku oil, can, therefore, be used in a lamp than the corresponding American oil, for the Baku oil is less viscous than the American. A tight wick is better than a loose one, for in the former the top of the wick is better filled with oil when the wick is raised, and there is then less charring. For heavy oils the heating of the burners is of great importance, and if the flow of oil be obstructed this also falls off, so that the illuminating power falls off still more rapidly. The supply of air should always be kept down to a minimum; in solar-oil lamps it is excessive, and this accounts for the excessive consumption in these. With proper construction of the burners the consumption of petroleum oil per amyl-acetate unit is 32.4 grains per hour; of red pyronaphtha 37.5 grains. The better return from 10-line than from 14-line wicks is explained by the air supply increasing in the latter case more rapidly than the oil flow. The heavier the oil, or rather the more viscous it is, the narrower the chimney should be, so as to limit the air supply.

**SALT FOR WILMINGTON.**—The barque *Nor*, 498 tons register, which recently discharged a cargo of resin at Manchester, has been fixed from Weston Point to Wilmington with salt. The *Nor* left Manchester on Wednesday for Weston in charge of a tug.

**DEODORIZING GAS ENGINE EXHAUSTS.**—A useful device for this purpose consists of a box, divided into two compartments by a perforated partition, on which bone black is spread in a moderately thick layer. The exhaust gases from the engine enter into the lower compartment at the extreme left, pass through the perforated dividing wall and superimposed layer of absorbent in the upper compartment, and thence escape into the open air through a pipe at the upper right-hand side. Thus the ammonia and fetid hydrocarbon gases are absorbed by the bone black, and whatever liquid offensive particles may be in the products of combustion are retained by it mechanically. Water of condensation collecting in the lower compartment may be drained off through a drip pipe.

**LIVERPOOL SALT SHIPMENTS.**—During January the shipments of salt from Liverpool totalled 32,900 tons, compared with 32,637 in January, 1895, while from Runcorn and Weston the shipments were 3,736 tons, compared with 5,159 tons, thus showing a total decrease of about 1,200 tons compared with January, 1895. Shipments to the United States have nearly doubled, while increases are shown in the shipments to British North America, West Indies, Africa, Asia, and to European ports, while decreases are noticed to Central and South America and Australasia. The clearances from Liverpool for Calcutta amounted to 9,170 tons, as against 9,116 tons in 1895, and 17,739 in 1894. The probable clearances for February for Calcutta and Rangoon are estimated at 16,100 tons.

**PETROLEUM ACCIDENTS.**—At the St. Pancras Coroner's Court on Saturday Dr. G. Danford Thomas held inquests on the bodies of John Collins (55), sawyer, and Barbara Macmillan (77), a widow, whose deaths from burns were consequent upon the use by them of cheap glass petroleum lamps. In the case of the old lady, widow of a type founder, her death was due to her use of a penny night lamp which she persisted in using in spite of the remonstrances of her family. The foreman of the jury said it was quite time there was legislation to prevent the sale of these notoriously ill-made, fragile, and dangerous lamps, mostly manufactured abroad and imported into this country. Mr. James Gibbons, inspector of the London County Council under the Petroleum Acts, stated that the Council were desirous of legislation to this end, and requiring the marking or stamping of oil lamps by appointed authority as a guarantee that after testing they were found to be reasonably safe. He submitted a metal lamp which was sold at 6d., and was absolutely safe. As showing the necessity of the desired legislation, he mentioned that according to the last available annual statistics, the Metropolitan Fire Brigade were called to 448 fires reported to have been caused by petroleum lamp accidents. Of these 90 were ascribed to explosions and 337 to the upsetting of lamps. There were, in addition, 3,061 small fires resulting from the use of these dangerous lamps, and causing damage—fires of which insurance companies were cognisant, but to which the fire brigade were not summoned. The County Council's inspectors had investigated 284 lamp accidents in the course of one year, 31 of which were fatal, involving the loss of 33 lives. The Coroner said there was the less excuse for the use of these cheap, fragile lamps, mostly "made in Germany" as a home-made safety lamp, constructed on principles approved by the County Council, could be had for 6d. In returning a verdict of accidental death in each case, the jury added a rider in favour of early legislation prohibiting the sale of obviously dangerous oil lamps. It would be interesting to know by whom and on what authority these inspectors are instructed to preach this wonderful doctrine of a 6d. lamp that is "absolutely safe" provided it has been graced with the sanction of the grandmotherly caretakers of the Metropolis.



## SOCIETY OF CHEMICAL INDUSTRY.

## MANCHESTER SECTION.

The fourth meeting of this section was held on Friday, February 7th. Before proceeding to the business of the evening, the Chairman (Mr. G. E. Davis) addressed the meeting upon the recent discovery of Professor Röntgen. He pointed out that Röntgen's demonstration of the correctness of Clerk Maxwell's speculations was only a few weeks old, so that not much was known yet concerning the physical properties of these particular radiations, but several demonstrations had taken place both in this country and abroad, from which something of their nature might be gathered. At the last meeting of the French Academy of Sciences, M. Poincaré exhibited a number of shadowgrams of objects which had been taken through opaque bodies, and M. Lebon made a communication to Professor Arsonval, who laid it before the Academy, tending to show that these X-rays are not merely altered light rays, but radiations accompanying the luminous rays of ordinary light. Though the practical adaptation of the discovery was progressing day by day, it was as well to bear in mind Dr. Speiss's advice that the shadowgrams produced so far were not in the ordinary sense of the word photographs, but rather prints in which the object takes the place of the negative, as in the preparation of transparencies for the lantern. Up to the present there is no known method by which these X-rays can be focussed so as to form an image on a glass plate in the ordinary camera. At Vienna, Professor Neusser has shown his students a print of a gall stone in the liver, and another of stone in the bladder, but the account does not say whether the prints were produced from the living organism, or from post mortem preparations. Professor Mosetig is also credited with having demonstrated with the greatest clearness and precision the injuries caused by a revolver shot in the hand of a patient, and the position and nature of a malformation in the foot of another.

Amongst the shadowgrams exhibited by Dr. Speiss, was one of very interesting character, showing the hand of a servant at the Urania Institution, who some years ago ran a piece of glass into his hand which could not be extracted—the shadowgram, by the X-rays, showed this piece of glass quite distinctly. Recently, at the Camera Club in London, Mr. Campbell Swinton showed some photographs similar to those obtained by Professor Röntgen, by the aid of Crookes' radiant matter tubes. Mr. Swinton employed a half horse-power electric current, and passing it through an induction coil, he loaded ten Leyden jars, the discharge from which was passed through a second induction coil, from the secondary system of which a Crookes' tube was excited. He stated that he only succeeded in this way, and had failed with Crookes' tube excited by an ordinary induction coil. A number of interesting prints were handed round by the Chairman for inspection, and aroused considerable interest among the members.

Dr. Grossman then read his paper on "Recent Developments in the Manufacture of Chlorates." He reviewed the commencement of the industry in this country simultaneously with the discoveries of Pechiney in France, and described his own experiments when at Gamble's works. At that time chlorate of potash was mainly, if not exclusively, being made by the Manchester Aniline Co. with the tartaric acid method, and by Mellor, at Patricroft, by the silicofluoric acid process. He dealt with Colonel Gamble's process for making chlorate of soda, as worked at the Gerard Bridge Works in 1868, and also the plant put down at Hardshaw Brook, in 1879, for the improved process in which sulphate of soda was substituted for carbonate in precipitating the chlorate. At that time the annual consumption was not more than 25 to 50 tons, while to-day it is 500 tons, apart from the chlorate made by other processes. He also referred to the establishment of barium chlorate manufacture in 1881, the process for which had been working unpatented and unknown for fifteen years, and described his experience in the preparation of ammonium chlorate on a large scale. Special attention was drawn by the lecturer to the erroneous statement in most text-books that chlorate of soda liquors could not be safely decomposed with HCl, a thing that had long been done without great risk by running the chlorate liquor into the HCl while steam was passing through it. The paper concluded with a review of the patents referring to chlorates down to the present date.

Mr. Barnes then read his paper on the "Estimation of Organic Matter by means of Chromic Acid," and described his modified process in full. He prefaced his paper by describing a method of obtaining ammonia free water for Nesslerising by means of adding a small quantity of bromine vapour, well shaking and boiling, after which a little KI. is added to remove the slightest trace of Br., and the boiling repeated. There was a very brief and rather featureless discussion, in which Dr. Lewkowitsch and Mr. Grimshaw took part. The discussion on Dr. Grossmann's paper was carried on by Mr. Grimshaw, Mr. P. Hart, and others. The Chairman described the experiences of a London company that started to manufacture chlorate of ammonia on a large scale, with most lamentable results as far as the works were concerned. He also said that explosions had occurred at the Greenbank Alkali Works through running the rough chlorate liquors into HCl. Dr.

Grossmann, replying, said chlorate was first made by Col. Gamble in 1848, when it was impossible to place half a ton a week. The tartaric acid process was re-patented in 1883 to 1884, though it had been known for such a long time. A successful meeting was brought to a close with the usual votes of thanks.

## NOTTINGHAM SECTION.

A most successful meeting of this section of the above society was held on Wednesday, the 5th inst., at the Mechanics' Institution, Derby, amongst the members present being Professor Clowes, Dr. Sudborough, and Messrs. Archbutt, Caven, Kempson, Ward, Wood, &c. Mr. F. Carulla occupied the chair. Mr. L. Archbutt, F.I.C., read three communications. The first was entitled, "Note on the ignition of sawdust by nitric acid," in which the author gave an account of experiments made to find out what danger attaches to the usual way of packing bottles containing this acid in sawdust, when delivered for transit to the railway company. In each experiment the bottle was removed from the box as if for transit, and the cavity left in the sawdust was filled with acid, thus producing the exact conditions of a complete breakage. In one case ignition occurred readily, the mass of sawdust bursting into flames, and in all cases, even with comparatively weak acids, danger was apparent with such varied kind of sawdust as those of pitch pine, white deal, elm, and oak, whether in a dry or a damp state. A discussion followed, in which Mr. Ward, Dr. Clowes, and others took part.—Replying to the chairman, Mr. Archbutt said that he would recommend the use of kieselsuhr, or some similar absorbent material, for the safe packing of bottles containing dangerous acids. The next note, Mr. Archbutt explained, had been prepared in consequence of a suggestion of the president of the society (Mr. Thomas Tyrer), and was a description of some experiments the author had conducted to ascertain the influence at atmospheric temperatures on the pressure of ether and other volatile liquids in closed vessels. An ingenious laboratory arrangement was described, which, being made of glass, permitted one to see what was occurring during the course of the experiments. It appears that what happens in a closed vessel containing ethers, but not quite filled, when the temperature is increased and the pressure rises, is that the residual air becomes dissolved in the ether until the vessel may be completely filled with liquid, the whole of the air being absorbed. This explains why with ethers of 723 s.g., which filled  $\frac{3}{8}$ ths of the containing vessel, the remaining  $\frac{1}{8}$ th being air, a pressure of only 17 lbs. per square inch was obtained on raising the temperature 50°F., viz., from 50° to 100°F.—During the discussion that followed, Dr. Clowes mentioned certain experiments that had been made to show the danger of sending about ammonia cylinders full up to the nipple as has been sometimes done, when warmed, even mild, steel vessels had been shattered by the expansive action of the liquid.—The chairman remarked that the application of safety valves to the vessels would almost appear necessary under such conditions.—Mr. Wood said that in the case of gasoline, which was carried about in wooden casks, these proved a means of relief to the pressure by their porosity. He had tested this by measuring the depth of liquid in a cask and leaving it well closed for some weeks, when he found on again measuring a loss of two inches in the depth.—Mr. Caven thought that neither safety valves nor exudation through the wood were desirable means of protection when dealing with inflammable liquids.—Mr. Wood explained that the mixture of air and gasoline produced a permanent gas. He had collected some in a holder, which was kept cool for a length of time, without the gasoline becoming liquified.—The Chairman here asked whether any of the members had any experience with the ether light used for magic lantern purposes. The light, he believed, was produced by passing oxygen from a cylinder through ether usually of 730 s.g., i.e., the ordinary methylated sort. Recently an explosion occurred when using this light, which he (the chairman) was disposed to attribute to the absence or to defective character of the safety jet that should apparently be used. It had, however, been considered that the high specific gravity of the ether was at the bottom of the mischief, which he was not disposed to agree with.—Dr. Clowes, whose experience with explosive gases entitles his views to respect, considered that the explosion referred to might certainly be due to ether of 730 having been used, and that one of a lower specific gravity would be less likely to produce an explosive mixture.—A further note on Hübl's test completed Mr. Archbutt's varied and interesting contributions, for which, on the motion of Dr. Clowes, he was most heartily thanked, the meeting then terminating.—Mr. John White, F.I.C., has promised to read a paper at the next Derby meeting, which will take place in April.

MESSRS. A. DE RONDE AND CO.—This firm has sent us a neat little desk calendar for 1896, which is specially suited to the requirements of the chemical trade, as on each sheet there is a table comparing specific gravity with the Beaumé and Twaddell hydrometer scales. The table ranges from 0°Tw. to 217.4°Tw., or a sp. gr. of 2.087.



## MANGANESE MINING IN THE VIRGINIAN VALLEY.

[BY JOS. D. WEEKS.]

THE chief sources of the manganese produced in Virginia, U.S.A., have been the mines of the Valley of Virginia, or, as it is sometimes called, the Shenandoah Valley. The manganese belt in this valley lies along the western base of the Blue Ridge, on the eastern side of the valley. It is asserted that this belt extends 300 miles, and that workable beds of manganese ore have been found in every one of the twelve valley counties that abut on the western edge of the Blue Ridge.

It is along this belt that the remarkable body of iron ore accompanying the Potsdam or No. 1 of Rogers is found, and with this iron the manganese ores are associated.

It is impossible in the space of the present report to describe the deposits of manganese ore which have been mined in this valley. They will be found described at some length in the 1885 volume of "Mineral Resources of the United States." A brief description, however, of the Crimora Mine, which is, as has been stated several times, the most important deposit of manganese in the United States, may not be without some interest.

The ore deposit, which is most peculiar in its location and accumulation, occurs in an elliptical basin about 500 feet broad on its transverse axis and 800 to 900 feet long. This basin is cut out of the Potsdam sandstone, which is hard rock at this place. Opposite to the basin and at right angles to its longer axis is a deep ravine, Turks Gap, sharply cut into the flanks of the mountain, through which a stream flows. Nearly opposite to this ravine is a ridge that served as a bulwark to the action of the forces at work in this section. Evidently this basin is the work of old-time eroding agencies, acting just as water now acts below a river dam, excavating a deep-curved section. The formation and location of this basin, as well as the deposits it contains, is exceedingly interesting and peculiar.

The basin is filled with wash and manganese ore lumps. The general body mixture, the mud, sand, and clay, with the lumps of manganese ore, were carried to place by agencies more recent than those which excavated the basin, just as the iron ore pits in the limestone valleys of Pennsylvania were filled in.

There are two, possibly three, special layers of yellow clay, which are rich in lumps and masses of ore, the lower about 30 feet, the upper about 25 feet, in thickness. A layer of clay, 20 feet thick, almost barren of manganese ore, separates these two ore-bearing layers.

The ore is found in lumps and masses from the size of a small pebble to lumps weighing a quarter of a ton or more. One mass was found which was 115 feet by 60 feet and 50 feet high. These lumps are found scattered through the basin, as above indicated, and cover an area of about six acres. The basin at the shaft is 117 feet deep. Some "sheets" of ore formed by the union of masses that lie in a pretty uniform direction are also found. The larger masses are blasted in the mine.

For many years, indeed up to 1892, when the lease of the property expired, the mine was operated by the American Manganese Company, Limited. As the method adopted by this company for sinking shafts and washing the ore was very elaborate, more so than that adopted at any other manganese mine in the United States, a brief description is given of the methods used. It should be noted that previous to sinking the shafts a number of test holes were drilled in various portions of the property to give an idea of the extent and locality of the ore pockets. The shafts were sunk through the clay to below the bottom of the ore and at a distance from it, so that their stability would not be interfered with by the mining operations. The main tunnel was also driven outside of and below the ore for a similar reason.

From the main tunnel chutes run out in all directions to the ore pockets, where treadings are driven out on the level in various directions. The excavation of the ore proceeds at several levels at once in the same pocket by stopping with timber, secondary chutes being provided, into which the material from the various levels is dumped, which finds its way to the main chute, and so to the cars. All of the mining is done by hand. Where the material is hard, hand drills and dynamite are used.

The water in the workings is conveyed in wooden troughs to the chute, where it passes down with the material and partly washes it.

About 300 tons of material were mined in a day of 12 hours, which, after crushing, washing, and separating, leaves about 50 or 60 tons of ore.

The material having no regular formation, but being heavy and loose, necessitates strong timbering of the headings, and the timber is in some places subjected to such a great strain that it has to be renewed about every 30 days. The large quantity needed may be gathered from the fact that about 1,500,000 feet are used in the Crimora mine in a year.

The main tunnel is seven feet square inside measurement, having timbers 12 x 12 inches three feet apart, which are framed to fit into each other, to make a framework, and have planking or slabs 12 x 12 inches at top and sides to resist the outside pressure.

All material as it comes from the mine is dumped into the chute above the crusher and fed through it. It falls directly into the "log" washer, which consists simply of two shafts about 18 inches in diameter and 24 feet long, on which are bolted spiral shaped teeth, running in a box or frame 24 feet long, 5½ feet wide, and three feet deep, filled with water. From this, material in a semi-washed state passes into the Bradford washer, which is a cylinder 13 feet long and 4½ in diameter, with teeth about seven inches long on the inner circumference. From this it goes into the classifying screen (conical shape) with a ¾-inch mesh. All that passes over the screen runs out on the conveyor, and while it is being conveyed into the cars the flint and other refuse matter is picked out. What passes through the ¾-inch mesh in the classifying screen runs by a chute into an elevator, and is then dropped into a jig, where all foreign matter is removed, the refuse passing off at the top, and the cleaned ore at the bottom runs into settling tanks and is raised by another elevator and dropped by chute into cars. All machinery works automatically, and the material is not handled after it is put into the crusher.

An analysis of the best quality of ore from this mine by Mr. A. S. McCreath shows the following:

### Analysis of Manganese Ore from Crimora.

|                         | Per cent. |
|-------------------------|-----------|
| Metallic manganese..... | 57.291    |
| Metallic iron.....      | 3.73      |
| Phosphorus.....         | .075      |

## SHEEP DIP AND GULLABILITY.

A WEST HAM local paper has been investigating the mysteries of making sheep dip, and has collected the following tasty details of the process, the richest bit of all being that the ever susceptible, sensation-loving "Daily Chronicle" has fathered the lot *et tous les embellissements*:-

"The materials used in the manufacture are caustic soda, sulphur, and red and white arsenic. The men wear overalls of brown holland, and before they go near the chemicals their faces have to be enveloped in silk handkerchiefs, leaving only their eyes uncovered. At the end of the day's work you see them coming away with their eyes in a horrible state—literally bunged up with inflammation and impurity. First of all the ingredients have to be stirred about briskly in large open vessels, and the operation produces clouds of steam, which is (sic) so heavily charged with poisonous fumes that the visitor, unused to breathing such stuff, sneezes and splutters at the first whiff of it. The men, however, have to work in it all day long. They themselves say that the last process is by far the worst. . . . The compound has to be ground and passed through a sieve, and it must be as dry as possible before this can be done. When it has gone through the sieve the powder comes down a kind of shoot, and if there is a current of air in the room it blows the fumes and the powder into the men's faces and on to their clothing directly they open the shoot doors. The men are not forced to work fast. Indeed, they are warned not to exert themselves enough to bring on perspiration, for then the powder will hold to the skin and eat into the pores. When the powder gets into the pores it causes violent itching, but woe to the man who scratches his skin! So much do the men dread the effects of the powder upon their faces that they cover themselves with Fuller's earth before they begin their work. . . . About twenty men and boys are engaged on this work at one factory, and only a few of them can keep on at it every day. They are frequently laid up, some for weeks at a stretch. Indeed, the proprietors of the place are continually taking on fresh men to fill the places of the victims. . . . The employers comply with the provisions of the Factory Acts in regard to dangerous occupations. But it is evident that if the manufacture of this sheep dip is so deadly, even after all Home Office precautions are regarded, as to shorten the span of human life to five years, the manufacture ought to be prohibited altogether." It would be a public benefit if such sensation-mongers were similarly treated.

THE WELSH TIN-PLATE TRADE.—In consequence of the continued depression in the tin plate trade, and with the object of maintaining the standard wages rate, a special council of South Wales Tinplaters' Union, which was the largest representative meeting held for nine years, recently took place at Swansea. It was decided to instruct all men working monthly contracts to tender their notices on the first Monday in February with the object of bringing about a general stoppage, beginning on March 1st. This will affect 60 works and nearly 11,000 hands. The meeting adjourned till February 22nd.



## Reports of Companies.

### CASTNER-KELLNER ALKALI CO., LTD.

THE first ordinary general (statutory) meeting of the shareholders of this company was held on Thursday last week, at the Cannon-street Hotel, E.C., Mr. William Mather presiding.

The Secretary (Mr. H. Clarkson) having read the notice convening the meeting, the Chairman said: Gentlemen, you are aware that this is the statutory meeting of the company, which gives the directors an opportunity of becoming acquainted with the shareholders. Since the shares were allotted we have proceeded diligently in preparing for the new industry which we believe is likely to have great influence on the future of the alkali trade. We have been able to secure a very eligible site for the erection of new works near Weston Point on the estuary of the Mersey. The contract for the land has been completed, and I can safely say that so far as the situation is concerned, it affords excellent facilities for carrying out business on a large scale. The building of the works commenced this week, and will be pursued with the utmost diligence during the next few months. I must mention that the public subscription for the shares largely exceeded what we required. We do not stand alone in beginning this electrolytic process. The directors of the Solvay-Werke Gesellschaft, of Germany (people second to none in the world in connection with the chemical trade, having large establishments in America, Russia, Italy, and all over the Continent) have made careful investigations, and are so perfectly satisfied with the Castner-Kellner process that they have not only subscribed largely to the capital of this English company, which in itself is satisfactory to us, but determined to erect works in Germany simultaneously, and on the same lines and magnitude as ours. I may say that the plant has been ordered from this country so as to be precisely the same. (Hear, hear.) The Solvay Co.'s works will be placed at our disposal, and, in return, they have our experience. The Mathieson Alkali Co., of America, have already erected their plant, and the statements made to them regarding the Castner patents have been realised, and the reports from the United States are most favourable, the process giving perfect satisfaction, far beyond anticipation. As a corroboration of this I may add the company has decided to erect works on the Niagara Falls to enable them to extend the business. Our manager has had great experience, and is one of the best experts in the electrolytic and chemical world. I think you will agree with the directors in their belief that this industry is likely to be eminently successful in the future. Works will be established in various parts of the world, and will be conducted on the same lines as our present undertaking, and we shall then have the advantage of experience of previous results, before we proceed to expend the larger portion of our capital. I need not say more than that your directors wish to assure you that they are prepared to devote their time largely to this enterprise. We are none of us speculators, or company promoters, but anxious to make the future of this industry sure of success, and you may rely upon each one of us, according to his experience, giving our best knowledge and time in the interests of the enterprise, in which we are all largely concerned. The quotation for the shares will be made out in the course of a week or two. All preliminaries have been placed before the Stock Exchange and met with approval, so that in a fortnight's time you will be able to see how your shares stand in the estimation of the Stock Exchange. You may rest assured that the affairs of the company are in the hands of men well aware of their responsibility, who will do their utmost to fulfil them with satisfaction. If there are any questions shareholders would like to ask, I shall be happy to answer them to the best of my ability.

Replying to questions, the Chairman said the present market price in Liverpool for caustic soda, of 66 to 77 per cent., was from £7 5s. to £9 15s. per ton. One important factor connected with their product was that it would be of a higher quality than had hitherto been found on the market. Their works were situated very conveniently near two canals, namely: the Manchester Ship Canal and the Weaver Navigation. They had cheap and direct railway communication to Liverpool.

A cordial vote of thanks to the Chairman terminated the proceedings.

### ROSARIO NITRATE COMPANY, LIMITED.

The annual general meeting of this company was held on Thursday, last week, at Winchester House, E.C. Mr. Archibald Balfour presided, and, in moving the adoption of the report, said he thought that the prediction which he made at their last meeting, that the results of the present year's working would be satisfactory, had been verified. They had to deal with a total gross profit of about £116,000., compared with £169,000. last year, but, in making this comparison, it had to be remembered that an alteration had been made in the manner of carrying the stock of nitrate, etc., to the balance-sheet. It had

hitherto been their custom to take these stocks at a valuation, but in the present accounts they had been taken at cost price, and they thus represented a considerable additional profit. Since the date of the balance-sheet the stock of nitrate had been sold, and a considerable quantity besides, at prices which would, he thought, be considered satisfactory. The total make of the company for the year was 1,859,000 quintals, against 1,647,000 quintals in the previous year. The board were able to propose a further dividend of 5 per cent., making 10 per cent. for the year, and, after providing for the debenture sinking fund, a balance of £690. would remain to be carried forward. The burning question of a nitrate combination was occupying a considerable amount of attention at the present time. At their last meeting he stated that negotiations were going on in connection with this subject, and he might state that they had been going on since, and they were not absolutely concluded yet. However, excepting one or two small producers, unanimity had now been arrived at, and the Rosario Company had given its adhesion to the proposal. No doubt, their output would thus be diminished, but it was considered that it would be to their interest to join the combination. Moreover, their output would sell at a better price, so that they would obtain the same profit for a smaller quantity under the combination as they would for a very much larger quantity if the combination had not been formed. This was an important point, for it saved them from encroaching to such a great extent on their caliche-bearing grounds. During the year they were enabled to carry out successfully the operation referred to in their report last year—the placing of a special debenture capital of £200,000. to provide the funds required for the payment of the nitrate grounds known as the Puntilla de Huara and the erection of a new *oficina* thereon. The loan, he might state, was largely over-applied for. The motion was adopted.

*Initiarubber, Guttapercha, and Telegraph Works.*—The accounts show, after provision for doubtful debts, a nett profit for the past year of £49,325. 12s. Adding £20,913. 17s. 4d. brought forward, and deducting £12,500. interim dividend paid in July, there remains a disposable balance of £57,739. 9s. 4d. The directors recommend the distribution of a dividend of 15s. a share, free of income-tax, amounting to £37,500., making, with the interim dividend, a total payment of 10 per cent. for the year, and leaving £20,239. 9s. 4d. to be carried forward.

*Price's Patent Candle Co.*—Subject to audit, the accounts show that the profit for 1895 is about £81,700., to which has to be added £8,842. undivided profit from 1894, making together about £90,500. Deducting the dividend of 15s. per share, amounting to £28,125., paid in September, 1895, a sum of about £62,500. will be available for disposition at the meeting, and the directors recommend that the usual sum of £12,500. be written off for depreciation, that £32,812. be applied in paying a dividend of 17s. 6d. per share, that £10,000. be added to the reserve fund, and that the remainder (about £7,100.) be carried forward.

### DIVIDENDS.

*Messrs. Brunner, Mond, and Co., Ltd.*, announce a dividend of 30 per cent., carrying forward £95,060. This dividend is the same as last year.

*Salt Union, Ltd.*—The directors recommend dividends at the rate of 7 per cent. on the preference shares and 2 per cent. on the ordinary shares for the year ended 31st December, 1895, carrying forward about £11,000.

*Dec Oil Company, Ltd.*, Saltney, have declared a dividend of 6 per cent. per annum on the ordinary shares for the year ended 31st December, 1895.

*Patent Victoria Stone Co.*—In their annual report the directors recommend a total dividend of 10 per cent. for the year, leaving £3 963. undivided.

"PHOENIX" VERMILION.—Messrs. Berger, Kahler, and Co., of 7, Mark-lane, E.C., who are introducing this new vermilion, have sent us a sample of the pigment, and also a circular printed with the same. The tint is pleasing, and certainly stands acids well. There is really a great want for an inexpensive red colour, which in its manifold uses possesses the desirable resistance against chemicals (acids and alkalis), light, atmosphere, and heat, up to about 500 F. The prominent physical and chemical properties of the "Phoenix" vermilion should secure its universal use as an outside and inside paint in connection with oil, varnish, lacquer, lime, silicates, etc., on cement, wood, metal, leather, enamel, porcelain, and in all cases where a red colour of particular brilliancy is required, as, for instance, for all manner of printing, for wallpapers, paper, tinfoil, tinfoil capsules, for red pencil leads, and with astonishing success for sealing wax.



## The Patent List.

*This list is compiled from Official sources in the Manchester Technical Laboratory, under the immediate supervision of George E. Davis and Alfred R. Davis, who report professionally upon the value of Chemical Patents.*

### APPLICATIONS FOR ENGLISH LETTERS PATENT.

- Manufacture of Cyanides. J. J. Holden and H. Baum. 1,900. January 27.  
 Apparatus for Reducing Metals, Producing Acetylene Cyanogen, Nitrides, etc., by Electro-thermal Treatment. H. Maxim. 1,903. January 27.  
 Manufacture of Detergent. S. Woble and A. C. Irwin. 1,978. January 28.  
 Ferrite and Ferrate of Soda. H. R. Angel. 1,980. January 28.  
 Improvements in Manufacture of Nitric Acid. R. J. Friwell and Brooke, Simpson, and Spiller, Ltd. 2,021. January 28.  
 Manufacture of Graphite Blocks. F. Ulrich. 2,027. January 28.  
 Sewage Treatment and Apparatus therefor. J. Hamer. 2,063. Jan. 29.  
 Utilizing Waste Heat for Generating Steam or Drying. J. Horrocks. 2,101. January 29.  
 Electrolysed Chloride Solutions for Disinfecting. E. Hermite, E. J. Paterson, and C. F. Cooper. 2,197. January 30.  
 Treating Wool. J. C. Anderson. 2,213. January 30.  
 Producing Paint. C. Sullivan. 2,219. January 30.  
 Artificial Stone. F. Turner. 2,223. January 30.  
 Extracting Oil from Fish, Refuse, etc. J. Jack. 2,247. January 31.  
 Preparing Magnesium Chloride Solutions. F. T. B. Dupré. 2,271. January 31.

### ABSTRACTS OF LATEST COMPLETE SPECIFICATIONS.

*These abstracts are specially prepared for the Chemical Trade Journal and ALL RIGHTS of publication are RESERVED. This is the earliest series of abstracts of Chemical and allied patents accessible to the public.*

Improvements in the Production of Oxygen Gas and Apparatus therefor. A. Sweetser, 67, Croxsted-road, West Dulwich. Eng. Pat. 12,245. June 24th, 1895.

The apparatus is specially designed for the continuous generation of oxygen from chlorate of potash, &c., and the storage of the gas in a collapsible holder, the whole being arranged to afford a convenient and portable apparatus for use with oxy-hydrogen lime-light, and for similar purposes. There are three drawings.

Improvements in and Means to be Employed for the Obtainment of Zinc from its Ores, and the Electro-deposition of Zinc upon Iron, or other Metals and Alloys. The Cowper-Coles Galvanising Syd., Ltd., 39, Victoria-street, Westminster, and S. O. Cowper-Coles, 16, Adam-street, Manchester-square, London. Eng. Pat. 2,999. February 11th, 1895.

To obtain a bright adherent deposit of zinc on iron, &c., and avoid the formation of zinc sponge, an electrolyte containing zinc sulphate, and ferrous sulphate is used, the latter being partially oxidised to the ferric state. A good proportion is found to be 35 ounces of zinc sulphate to 12 of iron. It is preferable to keep zinc dust suspended in the electrolyte, so as to neutralise the acid as fast as liberated. The anodes can be made of the zinc ore, oxide of zinc, a basic salt of the same, or of iron. It is sometimes desirable to give the articles to be zincated a coating of oxide, which is done by dipping in a bath of potassium bichromate, and then drying on a sand bath. The electrolytic oxygen, it is claimed, prevents the formation of hydrogen compounds of zinc, so preventing the formation of sponge, while the ferrous sulphate is oxidised to the ferric state at the anode, and again reduced by hydrogen liberated at the cathode.

Treating Galvanisers' Flux Skimmings to recover Ammonia, and facilitate the extraction of the Zinc, with Apparatus for Use therein. C. T. G. Bennett and E. H. Shortman, Pelsall, Staffs., and B. Bracey, Avondale-rd., St. George's, Bristol. Eng. Pat. 5,938. March 21, 1895.

In the usual treatment of the skimmings, the ammonia, as well as being lost, was a source of trouble, since it prevented the whole of the zinc being recovered. By this process the ammonia is removed first by adding excess of lime, which neutralizes the acid and liberates the ammonia. The residue is then dried and treated in the usual way for the recovery of the zinc. In carrying out the former step, the skimmings are boiled in a horizontal wrought-iron boiler, fitted with an agitator. The ammonia escapes into a wide vertical pipe, packed with coke, which retains any traces of lime, &c., that may be carried over by the gas. It next passes through a small tank, and from thence into a condensing coil, from which the solution of ammonia flows away into store tanks. Any gas that condenses in the small tank is run, by a bye-pass, back into the boiler. When desirable, the warm water surrounding the condensing coil can be run down the coke-packed pipe to cleanse it. There is one drawing.

Metallic Mixtures and Alloys for Effecting Electro-Chemical Decompositions. O. Imray, 28, Southampton Buildings, London (communicated by Dr. L. Diehl, Hamburg). Eng. Pat. 2,804. Feb. 8, 1895.

Alloys of aluminium or magnesium with lead, tin, and zinc, are prepared, which, when brought into contact with either hot or cold water, liberate hydrogen. Such alloys may be used for many purposes, but the special object of their preparation is for the separation of gold from cyanide solutions. The alloy for this purpose contains 5% of Al and Pb and 90% zinc for solutions containing 0.1% or more of cyanide. The alloys are best used in the form of turnings or shavings packed in boxes, up through which the cyanide solution is caused to pass.

## COTTONSEED OIL MILLS AT NEW ORLEANS.

A new cottonseed oil mill has recently been opened at New Orleans. The mill belongs to the New Orleans Cottonseed Oil and Manufacturing Company, Ltd., whose capital is £6,000.

It has a grinding capacity of 35 cars of cottonseed a day, and will employ about 35 men. It is under the management of Lawlor and Chaery, who are old-time millmen and brokers in cottonseed products. With the addition of this mill the cottonseed oil mills of New Orleans have a grinding capacity of about 1,000 tons per day. This amounts, with seed at £2 a ton, to £2,000 a day, which is distributed among the farmers of the neighbouring States during the six months of the year that the mills run. When the branch mill of Messrs. Lever Brothers, Ltd. (England), which is being built at Vicksburg, U.S.A., at a cost of £40,000, is completed, New Orleans mills will have a grinding capacity of 1,150 tons a day. When both the new mills are in operation New Orleans will be one of the largest cottonseed oil markets in the country, and five or six hundred men will draw their salaries from cottonseed oil mills. About 100 men are employed for every hundred tons of seed crushed.

When, on January 2nd, the wheels turned for the first time in the new mill of the Oil Manufacturing Company, Ltd., there were 42 carloads of seed standing on the railroad switches, so it can easily be seen that there will be no suffering so far as paucity of material is concerned.

## Trade Notes.

**SERIOUS PETROLEUM FIRE.**—On Thursday last week, a fire broke out at the Peruvian Corporation at Callao, caused by an explosion of petroleum. For six hours the town was in great danger, owing to the risk of the flames spreading to the large petroleum stores alongside the burning building. Sixty tons of coals were consumed, together with two tanks of petroleum and a portion of the general stores. The man through whom the fire originated was killed by the first explosion, and two firemen injured.

**RENEWAL OF THE BATOUM OIL SHIPMENTS.**—The Consul at Batoum reports that through communication between Baku and Batoum, both for passengers and goods, has been resumed on the Trans-Caucasian Railway, and that, although the line is not yet in a thorough state of efficiency, a number of petroleum trains which were on the line at the time of the interruption, have already arrived at Batoum. Two pipe lines of small dimensions have also been laid between the stations of Molita and Biclogon, one by the Union of Baku Petroleum Refiners, and the other by outside firms.

**THE UNITED ALKALI COMPANY'S NEW RULE.**—Owing to the recent accident at Widnes, the United Alkali Co., Ltd., have issued the following rule concerning the cleaning of sewers:—"No person must be allowed to enter any part of a sewer, whether closed or open, unless he is thoroughly secured by a rope around the waist, such rope to be connected securely to the surface of the ground, and two men at least must be in attendance on the surface ready to render assistance in case of need." The Directors request that managers of works will personally see that the rules, and all other conditions which have for their object the prevention of accidents to workmen, are strictly enforced.

**THE SCOTCH OIL TRADE.**—Now that the Scotch oil trade combine is completely dissolved, and cutting is again general, it is feared that not more than two or three Scotch companies will declare a dividend two months hence. Practically, the whole of the large gains promised by the combination have been lost, and as half a million of Scotch capital is invested in these companies the loss to investors will be heavy. Thus the Standard Oil Company of America is once more master of the situation. There is this difference however. The Scotch producers will be once more free to speak the truth about the use of low flash oil. It is a point well worth considering from a business as well as a scientific point of view.



**SAD DEATH OF A CHEMIST.**—The dead body of Mr. Joseph Edgar Law, aged 26, of Brook Cottage, Castleton, a manufacturing chemist, was recovered from the canal basin at Hopwood on Tuesday. How Mr. Law got into the water is not known. He had been missing since Friday, 7th inst., on which day his father, Mr. James Law, left him well and hearty at the Manchester Royal Exchange.

**GERMAN COMPETITION IN THE COAL TRADE.**—It is unpleasant, though not surprising, says the *Financial News*, that Westphalian coal, rather than English coal, has been getting the benefit of the increased demand in Hamburg. Imports of the former were 105,000 tons larger last year, while the imports of English coal into Hamburg only rose 23,000 tons. The Rhenish-Westphalian Coal Syndicate has, however, only obtained its hold of the Hamburg market by means of great sacrifices, and it is quite possible that English coal shippers will regain their former ascendancy.

**RIVAL INCANDESCENT GAS LIGHT COMPANIES.**—Before Mr. Justice Mathew, the case of the Incandescent Gas Light Company v. Helio Incandescent Gas Burner Company and others, came on recently. It was an action in which the plaintiff company sought to recover damages for the infringement of certain patents. They also asked for an injunction restraining the defendant company from further infringement.—Mr. Walters, on behalf of the plaintiffs, said he understood that the defendants consented to judgment for an injunction, damages, and costs.—Mr. Arthur O'Connor, M.P., said he had been instructed to consent to judgment for the plaintiffs.—Judgment was accordingly given for the plaintiffs, with costs.

**GERMAN IRON AND STEEL PRODUCTION.**—According to the statistics collected by the Association of German Iron and Steel Manufacturers, the pig-iron production of the German Empire during the year 1895 amounted to 5,788,798 tons against 5,559,322 tons during 1894. The total output was made up of 1,524,334 tons of puddling pigs and Spiegeleisen, 444,495 tons of Bessemer pigs, 2,898,476 tons of Thomas pigs, and 921,493 tons of foundry pigs. The several divisions of the Empire furnished the following proportions of the whole production:—North-Western group, 47.8 per cent., or 2,765,427 tons; Eastern group, 9.2 per cent., or 531,451 tons; Northern group, 4.6 per cent., or 274,685 tons; and South-Western group, 21.6 per cent., or 1,252,312 tons. Nearly  $\frac{3}{4}$ , or 82.2 per cent., of the output of Bessemer pigs is furnished by the North-Western group.

**SAVANNAH PHOSPHATE SHIPMENTS.**—The following are the shipments of phosphate rock from the port of Savannah, Ga., U.S.A., during the year 1895:—

| Month.         | Tons.  | Month.          | Tons.  |
|----------------|--------|-----------------|--------|
| January .....  | 5,644  | July .....      | 8,509  |
| February ..... | 4,100  | August .....    | 4,658  |
| March .....    | 3,961  | September ..... | 2,275  |
| April .....    | 5,972  | October .....   | 8,550  |
| May .....      | 18,418 | November .....  | 10,556 |
| June .....     | 4,628  | December .....  | 3,156  |
| Total .....    |        |                 | 80,427 |

**THE NEW LIGHT RAYS.**—It is not often that a scientific society in London has to announce "house full," but at Mr. Swinton's demonstration of the Röntgen process before the Royal Photographic Society this week crowds were turned away. The lecturer began by illustrating the effect of the ordinary electric discharge upon a sensitive plate. From that he passed to the vacuum or Geissler tube, which he exhausted while the current was illuminating it, and showed in conclusion a brilliant collection of Crookes' tubes phosphorescing with rays of all colours, according to the nature of their contents. Amongst the most beautiful were a group of rubies, which the cathode rays caused to glow with a deep red light. Photographs were shown in the lantern of the bones of the hand, of a foot, of a live frog, and of a sole, and a number of the audience handed up their purses to the platform in order that their contents might be photographed without the purses being opened. A visitor with a splintered bone in the middle finger of his left hand also submitted to the operation, which resulted most successfully, the bones of the entire hand being very clearly rendered. The Earl of Crawford, Mr. J. W. Gifford, and Captain Abney, among others, discussed the results, and commented very warmly on the success of the demonstration. A series of experiments now proceeding in the studio of a well-known London photographer has shown, however, that similar, or at least analogous, effects can be got by placing the photographic slide under an ordinary incandescent electric lamp, having first taken care to break the filament. The improvised "Crookes's tube" thus produced has, of course, a comparatively poor vacuum and a comparatively weak electric power. But if coins or metal buttons or bones, even stout pieces of cartilage, are laid on the top of the wooden shutter which conceals the plate and left for an hour or more an excellent picture of the objects can be developed.

**FISH IN THE MEDLOCK.**—Mr. Z. Walsh, writing to the *City News*, says:—In the year 1838 I was prevailed upon to strip and pass a net line or cord under some brushwood on the bank of the Medlock at Clayton Bridge, opposite the residence of the late Sebastian Nash. The draw was a good one of fine, clean trout. Higher up the stream, in a pool below the weir, could be seen any bright day scores of young trout, and this was so up to the year 1840, when I left that district.

**SALICYLIC ACID IN BRITISH WINES PERMISSIBLE.**—An important case connected with this point was heard at the Westminster Police Court recently. The wine sold admittedly contained 38 per cent. of the acid, or equivalent to 26.6 grains per gallon. The public analyst, Mr. Cassall, and Dr. W. H. Corfield deposed that the acid, even in the quantity used, was injurious to health. For the defence a large number of expert witnesses were called who regarded salicylic acid as a most useful preservative, and as being, in the quantity employed, perfectly harmless. Mr. De Ruten, in the course of a long judgment, said he had no hesitation in dismissing the summons on the ground that the drug was not, in the quantity used, injurious to health, and had not been added to the wine to increase its bulk or conceal its inferior quality, but solely for antiseptic purposes. Mr. A. Gill (who appeared for the vestry) said they could not appeal, because his Worship had decided on the question of fact.

## Market Reports.

### TAR AND AMMONIA PRODUCTS.

Benzols are fairly steady, 90's are quoted 2s. 1d. spot and 2s. forward, 50/90's 1s. 8d. to 1s. 8½d. Carbolic acids are firm, prices having advanced: Crude, 60%, is now standing at 2s. 1d., and 40% crystals 8d. Naphthas are unaltered, both as to position and price. Anthracene and creosote quiet. Pitch easy at 35s. 6d. to 36s., f.o.b., East Coast.

Sulphate of ammonia is much firmer. There has been a fairly good demand in spite of the advancing market, though orders from consumers have not been much in evidence. Closing values are:—Beckton £8. 12s. 6d., London outside makes £8. 10s., Liverpool £8. 10s., Hull £8. 10s., and Leith £8. 10s. to £8. 12s. 6d., all prompt. Nitrate steadier.

### LIVERPOOL MINERAL MARKET.

The firm tone reported last week has been more than maintained in minerals generally, and in some particular cases stocks have been entirely exhausted. Manganese arrivals continue very slow, whilst the demand is considerably increased; spot stocks are practically *nil*, and prices have advanced. Ground manganese continues in good demand at £6., £8., £10., and £12. 10s. per ton, according to quality, but there is an upward tendency. Sulphate of manganese sells freely at £18. to £19. per ton. Manganiferous ore: There is a better demand for this article, and the price is unaltered. Chrome ore: Arrivals continue to come in slowly, but importers are securing their prices. Bauxite: The inquiry is strong, and prices are firm and likely to go further now that the largest undertaking for the manufacture of aluminium is about to commence, and therefore large quantities of bauxite will be consumed. French chalk: Although the arrivals have increased, still the demand is such that not only have they been consumed, but stocks are practically reduced to *nil*, and prices continue firm at 70s. to 75s., 80s. to 90s., and 100s. to 110s. per ton. Wolfram and scheelite: Spot stocks continue scarce, especially of high quality, and prices have advanced, and are likely to do so in the future, as prices have been below the cost of production. Arsenic continues scarce at £17. to £19. per ton. Fuller's earth is in good demand at unaltered prices—50s. for lump, "Emerald" and other brands, 55s. for ground, and 75s. for impalpable powder. Rottenstone is in more inquiry, and full prices are being paid: £8. 10s. to £15. per ton, according to quality. Ochres and umbers continue to sell steadily at 60s. to 65s. per ton for prime J.C. ochre, and 40s. to 45s. per ton for prime umber. Carbonate and sulphate of barytes are unchanged; the demand has increased, whilst the production has also increased proportionately. Plumbago: The demand continues good for foundries and lubricating qualities at £6. to £10. per ton, whilst imports are slow; prime Ceylon meets with steady demand at £15. to £20. per ton, according to quality. Pumice stone: The demand is steady, ground being done at £6. to £7. per ton, and superior Tenerife lump stone at £7. 10s. per ton. Bog ore is in more request at 22s. 6d. to 25s. per ton. Magnesite: Raw lump and ground are steady at somewhat higher prices. Lead ore: Potters' qualities meet with a steady demand at higher prices.



## REPORT ON MANURE MATERIAL.

There has been a fair inquiry and a moderate amount of business, but prices, except for nitrogenous material, do not show any improvement. The quotations for mineral phosphates are unchanged. There has been some buying of high grade Florida for the North Sea recently, but for the lower grades there is not much disposition to operate. There is nothing fresh to report in River Plate bones, value of cargoes afloat remaining about £3. 15s. per ton. Crushed Kurrachee bones hang fire at £3. 18s. 9d. per ton on spot, and at £4. for shipment. Considerable business has been done in Bombay bone meal, afloat and for shipment, at £3. 15s. per ton, and value on spot is £3. 15s. to £4. per ton, according to quality. Nitrate of soda is firm in all positions. On spot, the value is 7s. 10½d. to 8s. per cwt., according to quality. Due cargoes of ordinary quality are worth about 7s. 10½d. per cwt., and for shipment 8s. to 8s. 3d. per cwt., according to position, is being paid.

## THE METAL MARKETS.

LONDON, WEDNESDAY.—Pig iron, firm: Scotch warrants closed at 47s. 5½d.; Middlesbrough, 38s. 7d. cash, and hematite, 48s. 11½d. Copper, firm: Chili bars, G. O. B.'s and G. M. B.'s closed at £43. 13s. 9d. to £43. 16s. 9d. cash, and £44. 1s. 3d. to £44. 6s. 3d. three months. Tin, firm: Straits closed at £60. 12s. 6d. to £61. 2s. 6d. cash, and £61. 5s. to £61. 15s. three months. Australian, £61. 7s. 6d.; English ingots, £64. 10s. Lead, quiet: Spanish, £11. 5s. to £11. 6s. 3d.; English, £11. 7s. 6d.; Silesian spelter, ordinary, £15. to £15. 2s. 6d. Nickel, 1s. 2½d. Antimony, £29. 15s. Quicksilver: first hands, £7. 2s. 6d.; second hands, £7. 1s. 6d. Copper shares, firm: Cape, 2½ to 2¾; Copiapo, 2 to 2¼; Libiola, 2½ to 3½; Mason and Barry, 2¾ to 3; Rio Tinto, 17½ to 17¾; Tharsis, 4¾ to 5½.

GLASGOW, WEDNESDAY.—Market firm, with large business. Scotch done at 47s. 4d. and 47s. 6d. cash, also at 47s. 6d. and 47s. 8d. one month; closing with buyers at 47s. 5½d. cash, sellers ask 47s. 6d. Cleveland done at 38s. 6d. and 38s. 7d. cash; also at 38s. 8d. and 38s. 9d. one month; closing with buyers at 38s. 7d. cash, sellers ask 38s. 7½d. Cumberland hematite done at 48s. 9d. and 49s. cash, also at 49s. 2d. one month; closing with buyers at 48s. 11½d. cash, sellers ask 49s. Middlesbrough hematite done at 46s. 7d. cash; closing with buyers at 46s. 6d. cash, sellers ask 46s. 7d.

## LIVERPOOL OIL AND COLOUR MARKET.

WEDNESDAY.

OILS.—Palm oil is steady. Lagos has been selling freely at £20. 5s., soft oils £19. 15s., Congo £18, Saltpond and Dixcove £17. 10s. and £17. 5s., all transit. Olive is very firm, with a moderate business doing. Prices are inclined to advance. There is no change in linseed, which is quiet at 20s. 9d. to 21s. per cwt. for Liverpool makes in export casks. Cottonseed is quiet, but quotations for Liverpool refined continue at 17s. 6d. to 17s. 9d. per cwt. Castor is firm, and promises to keep so. There is a good business doing in good seconds Calcutta at 2½d. to 2½d.; first pressure French 2½d. per lb. Tallow is moderate: Norths are quoted about 21s. to 21s. 6d., and Souths 23s. to 24s. Australian 22s. beef, and 23s. 6d. mutton. Resin is rather quiet, prices still standing at 4s. 10½d. for common, 5s. 3d. to 6s. 6d. medium, and 7s. to 8s. per cwt. for fine. Spirits of turpentine are in moderate demand at 21s. 6d. per cwt., spot. Petroleum easier: American 6½d. to 7½d.; Russian refined 6d. per gallon.

COLOURS are steady, without alteration in prices. Ochres: Oxfordshire, common, £10., medium, £12., best, £15. Derbyshire, common, 40s.; medium, 50s., best, 60s.; Welsh, best, 90s., seconds, 50s., and common, 18s.; Irish, Devonshire, 40s. to 45s.; French, J.C., 60s. to 65s.; M.C., 65s. to 67s. 6d. Umber: Turkish quiet; Devonshire, 50s. to 55s. White lead, £16. Red lead unchanged. Venetian red, £6. to £10. Cobalt: Prepared oxide, 9s. 9d.; black, 9s.; blue, 6s. Zaffres: No. 1, 3s. 6d.; No. 2, 2s. 6d. Oxide of iron: Common, £7.; medium, £10.; finest, £20. Zinc oxide, £22. 10s. to £25.

## MISCELLANEOUS CHEMICAL MARKET.

Business in the alkali trade is all round fairly satisfactory. There is good inquiry for caustic soda, and prices are well maintained for export. Practically there is no change in current values, which may be taken as last reported, viz.:—F.o.b. Liverpool, 77%, £9. 10s.; 74%, £8. 12s. 6d.; 70%, £7. 12s. 6d.; 60%, £6. 12s. 6d. nett, per ton, 10-ton lots. Some concessions from these prices are made for certain markets. Bleaching powder is still in active demand, and price unaltered at £7., f.o.b. makers' works, and £7. 5s. f.o.b. Liverpool.

Chlorate of potash further advanced to 5d. per lb. Chlorate of soda, 6½d. per lb. Ammonia alkali steady, at £3. 7s. 6d., bags, makers' works. Soda crystals, 37s. 6d. per ton. Bicarbonate of soda, in kegs, £6. 15s., f.o.b. Saltcake firm, at 26s. 6d. f.o.r. For sulphate of copper there is a strong demand, and price firm, at £16. 10s. to £16. 15s., f.o.b. Nitrate of soda on the spot is dearer, at 7s. 10½d. per cwt. Acetate of lime, brown, £4. 15s., c.i.f., and market overstocked. Acetate of soda dearer, at £14. 10s. to £14. 15s., c.i.f. White and brown sugar of lead firm in price, but in only moderate request. For white powdered arsenic a further advance in price is paid, and supply is scarce—price, £17. 15s. to £18. nett, f.o.r. Garston, Potash caustic 90%, £24. 10s. nett, c.i.f., with good inquiry. Carbonate also firm, at £17. 10s. nett for 90%. Yellow prussiate of potash, 7¾d. per lb. Cyanide of potassium, 95/97%, 1s. 2½d. per lb. For crystal carbolic price has still further advanced, and makers are fully sold—price for 39/40%, 8d. per lb. Aniline oil and salt firm, at recent quotations. For green copperas the demand is still active, and prices all round have a higher tendency. Sulphocyanides are in good request, but without improvement in value. The general state of trade in manufacturing districts is still far from satisfactory.

## WEST OF SCOTLAND CHEMICALS.

GLASGOW, TUESDAY.

As regards the general market the feeling continues to be one of encouragement, and of expectation as to a condition of real activity before very long. Prices are all well maintained, and in one or two cases there has been an advance. The firmness is most marked in sulphate of copper, which seems steadily rising, but chlorate of potash, saltcake and sulphur are all likewise hardening. This may also be said to be the case with caustic soda. Dye chemicals are steady and in the bichromates the old convention prices are very well held—both potash and soda. Sulphate of ammonia does not as yet participate in the slight general amendment, but it has suffered no further declension, and £8. 7s. 6d. to £8. 10s. f.o.b. Leith, prompt, is still the range. Nitrate of soda is a shade higher. Mineral oils and paraffins are all, nominally, as before; burning oils and lubricants are steady and firm of price, but there are still strong suspicions of further in-cutting as regards the solid paraffins, about which, however, there has been no open statement on the market.

Chief prices current are:—Soda crystals, £2. 2s. 6d., nett, Tyne; soda ash, 48/56°, £3. 15s. to £4. 15s. nett, Tyne; white alkali, 48/52°, £4. 10s. to £5. nett, Tyne; alum in lump, £5. 10s. nett, Glasgow; caustic soda, white, 76°/99. 5s., 70/72° £7. 12s. 6d., 60/62° £6. 12s. 6d., and cream 60/62° £6. 10s., all nett, Liverpool; bleaching powder, £6. 5s. to £7. 5s. nett, Tyne; saltcake, 27s. 6d.; borax, English, refined, £20., and boracic acid, £30. nett, Glasgow; bicarbonate of soda, 5-cwt. casks, £6. 10s., and 1-cwt. casks £6. 15s. nett, Liverpool; bichromate of potash, 4½d. nett, for Scotch and English deliveries (for export, 4¼d. nett, f.o.b. Glasgow); bichromate of soda, 3¼d. nett, for Scotch and English deliveries (for export, 3½d. nett, f.o.b. Glasgow); chlorate of potash, 5d. less 5%, Liverpool; nitrate of soda, 7s. 10½d. to 8s. 1½d.; sulphate of ammonia, £8. 7s. 6d. to £8. 10s. prompt, f.o.b. Leith; salammiac, first and second white, £39. and £37. nett, any port; sulphate of copper, £16. 10s., less 5%, Liverpool; paraffin scale, hard, 1¾d., and soft, 1½d. to 1½d. per lb.; paraffin wax, 120° semi-refined, 2¾d. to 2¾d.; paraffin spirit (naphtha), 7½d. to 8d. per gallon; paraffin oil (burning) No. 1, 6½d., and crystal, 6¼d., at works, for Scotch buyers (English sales about ½d. lower); ditto (lubricating) 865° £5., 885° £5. 10s. to £6., and 890/895° £6. to £6. 10s. Week's imports of sugar at Greenock were 30,869 bags unrefined beet.

## HULL PAINT, OIL, AND COLOUR REPORT.

TUESDAY.

OILS.—The situation remains unchanged, with but little variation in prices. The imports up to date (compared during the same time a year ago) have been:—Linseed, 68,130 quarters, against 30,875 quarters. Rapeseed, 5,873 quarters, against 18,965 quarters. Cottonseed, 35,982 tons, against 41,054 tons. Olive oil, 1,850 casks, against 1,475 casks. Rape oil, 557 casks, against 1,481 casks. Oil cakes, 2,991 tons, against 2,057 tons. Tallow, 5,199 cwt., against 2,106 cwt. Bones, 1,093 tons, against 950 tons. Turpentine, 4,167 barrels, against 2,967 barrels. Linseed oil steady, at 19s. 1½d. naked spot. February-April, 18s. 10½d.; May-August, 18s. 9d.; and September-December, 18s. 7½d. to 18s. 6d.; boiled and refined from £1. to £2. per ton extra. The export for the week has been 920 cwt. Refined cotton oil quiet at 15s. 3d. naked spot; February-April offers at 15s. 6d., and May-August at 16s. 3d. Crude, 13s. 9d. naked sellers spot. Casks, £1., and ordinary barrels 30s. per ton extra. Export of refined for the week has been 5,840 cwt. Olive oil, £29. per tun. Spirits of turpentine unchanged. Castor oil improving, but little altered in value.



Cod oil from £16. 10s. to £19. per ton Mineral oil scarce. Neutral liquid soap, £16. per ton. Locomotive grease, £12. per ton.

CAKES.—Linseeds steady: 95% pure, £6. 5s.; Russians, £5. 17s. 6d. per ton. Oil cakes, £5. 2s. 6d. to £5. 5s. per ton. Cotton cakes remain quiet: best makes, £3 11s. 3d.; seconds, £3. 7s. 6d. per ton. Rapeseeds: Black Sea, £2. 7s. 6d.; East India, £3. 7s. 6d. per ton.

PAINTS.—The demand for the time of year is satisfactory. Venetian red, red oxide, black, blue, green, and yellow ochre paints from £11. per ton. Dry mineral colours from £3. 10s. to £9. per ton. White and red leads unchanged. Ultramarines, 3d. to 8d. per lb. Ready-mixed paints, in 1, 2, 4, and 7 lb. self-opening tins, £24. White oxide of zinc unchanged. Paint remover, 25s. per cwt. Oak varnish, 5s. 6d. per gallon. Black varnish, £5. 10s. per ton, in barrels. Natural belt dubbin, 12s. per gallon.

### TYNE CHEMICAL REPORT.

TUESDAY.

Chemicals continue quiet, and there is practically no change to report in prices. Soda crystals are quoted at £2. 2s. 6d. per ton, gross weight. Locally, caustic, 76/77%, £9. 5s.; 70%, £7. 15s. per ton. Sulphur, £3. 17s. 6d. per ton. Other quotations as under:—

Bleaching powder, 50%, £7. 5s. per ton, nett; hard, £7. 10s. per ton, nett; caustic soda, 76/77%, £9. 5s. per ton, nett; do., 70%, £7. 15s. per ton, nett; recovered sulphur, 2 cwt. bags, £3. 17s. 6d. per ton, nett; soda ash, 48%, £3. 15s. per ton, nett; do., 52%, £3. 17s. 6d. per ton, nett; do., 56%, £4. per ton, nett; alkali, 36%, £2. 15s. per ton, nett; white alkali, 48%, £4. 10s. per ton, nett; do., 50%, £4. 15s. per ton, nett; do., 52%, £5. per ton, nett; hyposulphite of soda, 5-7 cwt. casks, £6. 5s. per ton, nett; do., 1 cwt. kegs, £7. per ton, nett; silicate of soda, 75° Tw., £2. 12s. 6d. per ton, nett; do., 100° Tw., £3. per ton, nett; do., 140° Tw., £3. 7s. 6d. per ton, nett; soda crystals, casks, £2. 2s. 6d. per ton, nett weight; gross weight; do., 2 cwt. bags, £2. 2s. 6d. per ton, nett weight; chlorate of potash, 5d. per lb., less 6%; pearl hardening, £3. per ton, nett; pure white sulphate of alumina, £3. 17s. 6d.

per ton, nett; blanc fixe, £7. 5s. per ton, nett; chloride of barium, refined crystals, £6. 15s., per ton, nett; do., 90-95%, crude calcined, £6. per ton, nett; sulphide of barium, crystals, £4. 15s. per ton, nett; carbonate of alumina, £30. per ton, nett; aluminate of soda, £30. per ton, nett.

SALT.—South Durham salt is steady at 9s. 6d. per ton, f.o.b. Tees.

COALS.—Trade is only dull, and prices, if anything, weaker. Coke is firmer, and in much better demand all round. To-day's quotations:—Best Northumbrian steam, 7s. 9d. to 8s. per ton; second qualities, 6s. 9d. to 7s. per ton; small steam, 3s. 9d. to 4s. per ton; bunker coals, 6s. 3d. to 6s. 6d. per ton; gas coals, 7s. to 7s. 3d. per ton; household coals, 10s. to 10s. 6d. per ton; coke, firm, 14s. to 15s. per ton.

### New Companies.

**Millwall Chemical Co., Ltd.**—CAPITAL £1,000, in shares of £1. each. This company has been formed to work in England, under licence Patent 12,527, 1895, for the dry distillation of sawdust, &c.

**Standard Oil Co. of Galicia, Ltd.**—CAPITAL £100, in £1. shares. This company has been formed to explore test petroleum grounds in Galicia, and to prospect for the oil.

**Standard Wax Candle Co., Ltd.**—CAPITAL £2,000, in £1. shares. This company has been formed to carry on the business of wax candle and night-light manufacturers. There were no articles of association.

**Scottish Acid and Alkali Co., Ltd.**—CAPITAL £25,000, in £5. shares. This company has been formed to carry on the business of manure, soap, paper-pulp, glass, bricks and pottery, coke, cement, and artificial stone manufacturers. The subscribers to the memorandum of association are:—R. Clark, 17, Smith's Place, Edinburgh, wholesale druggist; J. Anderson, The Vaults, Leith, wine merchant; W. D. Rankin, 54, Queen-street, Edinburgh, W.S.; R. H. Steedman, Goltyn, Carrick-road, Ayr, chemical manufacturer; A. M. Maclean, Glenmiln, Camfin Glen, Stirlingshire; W. Campbell, Engine Works, Paisley, engineer; W. Dunlop, 82, W. Regent-street, Glasgow.

### IMPORTS OF CHEMICAL PRODUCTS

#### AT THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

#### LONDON.

Week ending February 1st.

|                            |                        |
|----------------------------|------------------------|
| <b>Acetic Acid</b> —       |                        |
| Holland, 131 pks.          | A. & M. Zimmermann     |
| <b>Albumen</b> —           |                        |
| E. Turkey, £75             | Schenker & Co.         |
| <b>Alkali</b> —            |                        |
| France, 65 c.              | J. Barber & Co.        |
| <b>Alum</b> —              |                        |
| Belgium, 24 pks.           | R. W. Greeff & Co.     |
| Holland, 185               | Ohlenschlager Bros.    |
| <b>Ammonium Chloride</b> — |                        |
| Holland, 6 pks.            | H. Lorenz              |
| Germany, 6                 | F. Allen & Sons        |
| <b>Anthracene</b> —        |                        |
| Holland, 243 pks.          | Burt, Boulton & Co.    |
| France, 80                 | "                      |
| <b>Antimony Ore</b> —      |                        |
| France, 50 t.              | Smith, Sundias & Co.   |
| Australia, 16              | Hellet & Fry           |
| U. States, 17              | H. R. Merton & Co.     |
| Portugal, 50               | J. Bamber              |
| <b>Asbestos</b> —          |                        |
| France, £38                | Girard Frs. & Co.      |
| Germany, 19                | Craven & Co.           |
| Italy, 435                 | Bender & Marriog       |
| <b>Barium Chloride</b> —   |                        |
| Holland, 12 pks.           | Petri Bros.            |
| <b>Barytes</b> —           |                        |
| Belgium, 105 cks.          | J. L. Lyon & Co.       |
| Germany, 25                | O'Hara & Hoar          |
| Holland, 39                | Robertson, Selby & Co. |
| Germany, 18                | T. H. Willoughby       |
| <b>Boracic Acid</b> —      |                        |
| Italy, 12 pks.             | City Coml. Wf. Co.     |
| <b>Bromide of Iron</b> —   |                        |
| Germany, 16 pks.           | A. & M. Zimmermann     |
| <b>Bromine</b> —           |                        |
| Germany, 40 pks.           | A. & M. Zimmermann     |

|                                      |                              |
|--------------------------------------|------------------------------|
| <b>Gaoutchouc</b> —                  |                              |
| Ibo, 77 c.                           | Forbes, Forbes & Co.         |
| Madagascar, 90                       | Hammond & Co.                |
| " 24                                 | Kleinwort Sons & Co.         |
| France, 5                            | H. Johnson & Sons            |
| Inhabane, 11                         | Prop. Buil Wf.               |
| Zanzibar, 46                         | L. & I. D. Jt. Co.           |
| Penang, 157                          | Prop. Buil Wf.               |
| Singapore, 906                       | G. Ward & Sons               |
| <b>Castor Oil</b> —                  |                              |
| Italy, 25 cs.                        | City Coml. Wf. Co.           |
| " 25                                 | Barron, Harveys & Co.        |
| " 25                                 | Stebbing & Co.               |
| France, 20 brls.                     | Anderson, Weber & Smith      |
| " 43                                 | Beresford & Co.              |
| " 58                                 | C. Windschuegl & Co.         |
| Italy, 10 cs.                        | A. F. White & Co.            |
| " 25                                 | Major & Field                |
| <b>Caustic Potash</b> —              |                              |
| Germany, 28 pks.                     | J. M. Steel & Co.            |
| France, 46                           | W. E. Cole                   |
| " 46                                 | Phillipps & Graves           |
| Holland, 20                          | J. M. Steel & Co.            |
| <b>Chemicals (otherwise under)</b> — |                              |
| Holland, 10 cks.                     | Beresford & Co.              |
| France, 45                           | H. Johnson & Sons            |
| Holland, 7                           | H. Lorenz                    |
| Belgium, 21 cs.                      | T. Palmer                    |
| Germany, 2                           | L. & I. D. Jt. Co.           |
| France, 4 pks.                       | Flageollet & Co.             |
| " 5                                  | Mory & Co.                   |
| Germany, 7                           | 24 5 kgs. Phillipps & Graves |
| " 31                                 | 25 41 cs. T. H. Lee          |
| " 615                                | H. Lambert                   |
| " 40 c.                              | 24 pks. A. & M. Zimmermann   |
| <b>Cream of Tartar</b> —             |                              |
| Spain, 14 pks.                       | B. & F. Wf. Co.              |
| " 25                                 | W. C. Bacon & Co.            |
| France, 10                           | "                            |

|                    |                             |
|--------------------|-----------------------------|
| France, 21         | B. & F. Wf. Co.             |
| Portugal, 5        | "                           |
| Holland, 20        | Kirkpatrick & Co.           |
| <b>Dextrine</b> —  |                             |
| Germany, 30 pks.   | R. G. Hall & Co.            |
| " 10               | H. Lambert                  |
| " 10               | Ohlenschlager Bros.         |
| " 150              | Hernu, Peron & Co.          |
| " 300              | W. Balchin                  |
| " 160              | J. Barber & Co.             |
| " 50               | H. Lorenz                   |
| <b>Dyestuffs</b> — |                             |
| <b>Annatto</b>     |                             |
| Ceylon, 21 pks.    | L. & I. D. Jt. Co.          |
| <b>Argols</b>      |                             |
| Cape Town, 18 pks. | L. & I. D. Jt. Co.          |
| " 57               | Chalmers, Guthrie & Co.     |
| Italy, 273         | Thames S. T. & L. Co., Ltd. |
| " 250              | Union L. Co.                |
| <b>Gochineal</b>   |                             |
| Canaries, 4 pks.   | G. S. Bruce                 |
| " 6                | J. W. Borland               |
| " 8 bgs.           | Swanston & Co.              |
| " 5                | W. M. Smith & Sons          |
| " 6                | Kuhner, Henderson & Co.     |
| <b>Gutch</b>       |                             |
| Rangoon, 244 pks.  | Dalton & Young              |
| B. W. L., 30       | Ralli Bros.                 |
| <b>Extracts</b>    |                             |
| France, 30 pks.    | Union L. Co.                |
| Belgium, 210       | L. J. Levinstein & Sons     |
| " 490              | Boutcher, Mortimore, & Co.  |
| Denmark, 3         | Pickford & Co.              |
| France, 175        | B. & F. Wf. Co.             |
| U. States, 5       | Williams, Torrey & Co.      |
| France, 56 drs.    | Carey & Sons                |
| " 20               | C. Faust & Co.              |
| " 5                | Crosse & Blackwell          |
| <b>Fustic</b>      |                             |
| A. Turkey, 7 t.    | M. Ventura Hayti & San Dom  |

|                      |                            |
|----------------------|----------------------------|
| <b>Gambier</b>       |                            |
| Singapore, 641 pks.  | Beresford & Co.            |
| " 249                | W. Balchin                 |
| <b>Indigo</b>        |                            |
| E. Indies, 37 cchts. | W. France & Co.            |
| " 10                 | J. Owen                    |
| " 20                 | Croysdale & Co.            |
| " 21                 | Parry & Co.                |
| " 37                 | Walker, Munsie & Co.       |
| " 50                 | F. Huth & Co.              |
| " 50                 | Patry and Pasteur          |
| " 5                  | Ralli Bros.                |
| " 127 pks.           | A. B. Curti & Co.          |
| " 1 cs.              | A. E. Piegott              |
| Germany, 2           | T. H. Lee                  |
| A. Turkey, 117 t.    | Anning & Cobb              |
| " 50                 | F. Claydon & Co.           |
| Germany, 5 strds.    | Patry & Pasteur            |
| E. Indies, 44        | F. W. Heilgers             |
| " 7                  | Lewis & Post               |
| " 24                 | Credit Lyonnais            |
| France, 4            | L. & I. D. Jt. Co.         |
| Canaries, 5 bgs.     | W. M. Smith & Sons         |
| E. Indies, 134       | Elkan & Co.                |
| " 5                  | T. Barlow & Br.            |
| " 13                 | Parsons & Keille           |
| " 276                | L. & I. D. Jt. Co.         |
| <b>Logwood</b>       |                            |
| A. Turkey, 3 t.      | M. Ventura Hayti & San Dom |
| <b>Shumac</b>        |                            |
| Italy, 200 pks.      | Beresford & Co.            |
| " 200                | J. Kitchen, Ltd.           |
| " 100                | J. Knill & Co.             |
| France, 100          | R. Warner & Co.            |
| <b>Tanner's Bark</b> |                            |
| San Francisco, 6 t.  | Craven & Co.               |
| Belgium, 39          | Leach & Co.                |
| U. States, 25        | Sawer, Sons & Co.          |
| U. States, 11        | Elkan & Co.                |
| <b>Valonia</b>       |                            |
| A. Turkey, 67 t.     | Anning & Cobb              |
| " 134                | Hicks, Nash & Co.          |
| " 5                  | F. Claydon & Co.           |



**Farina—**

|            |          |                    |
|------------|----------|--------------------|
| U. States, | 350 pks. | Seaward Bros.      |
| Holland,   | 50       | Dunlop Bros. & Co. |
| Germany,   | 5        | L. & I. D. Jt. Co. |
| "          | 50       | Beck & Pollitzer   |
| "          | 100      | Seaward Bros.      |
| France,    | 9        | Hernu, Peron & Co. |
| Holland,   | 50       | J. Barber & Co.    |
| "          | 150      | J. Knill & Co.     |

**Glucose—**

|            |        |       |                       |
|------------|--------|-------|-----------------------|
| U. States, | 30 pks | 300 c | C. Southwell & Co.    |
| "          | 125    | 565   | L. Norman & Co., Ltd. |
| "          | 1,335  | 6,235 | R. G. Hall & Co.      |
| France,    | 600    | 600   | L. Norman & Co., Ltd. |
| U. States, | 1,000  | 1,000 | Fellows, Morton & Co. |
| "          | 750    | 4,300 | Sutro & Co.           |
| "          | 500    | 500   | Beresford & Co.       |
| "          | 500    | 500   | E. Dixon              |
| "          | 250    | 250   | Frier, Meyer & Co.    |
| Germany,   | 300    | 300   | J. Frank Ohimann      |
| U. States, | 500    | 500   | Pearce, Pelly & Co.   |
| Germany,   | 60     | 495   | J. Knill & Co.        |
| U. States, | 75     | 317   | L. & I. D. Jt. Co.    |
| "          | 100    | 100   | L. & N. W. Railway    |

**Glue—**

—, £1,721

**Magnesium Sulphate—**

|          |         |                      |
|----------|---------|----------------------|
| Germany, | 18 pks. | Berger, Kahler & Co. |
|----------|---------|----------------------|

**Manganese—**

|          |      |              |
|----------|------|--------------|
| Germany, | 9 c. | Taylor Bros. |
|----------|------|--------------|

**Manure—**

|            |          |                       |
|------------|----------|-----------------------|
| E. Indies, | 2,200 t. | A. Hunter             |
| Holland,   | 4        | Chemical Works        |
| "          | "        | (Late H. & E. Albert) |
| Germany,   | 5        | J. Barber & Co.       |
| Holland,   | 50       | J. Owen               |
| Germany,   | 70       | A. Hunter & Co.       |
| Alger Bay, | 5        | Hannond & Co.         |
| Morocco,   | 60       | Fox, Roy, & Co.       |
| & London,  | 5        | Hannond & Co.         |

**Mica—**

|            |      |                    |
|------------|------|--------------------|
| E. Indies, | £100 | W. M. Smith & Sons |
|------------|------|--------------------|

**Nitro—**

|        |             |                     |
|--------|-------------|---------------------|
| Chili, | 17,463 bgs. | W. Montgomery & Co. |
|--------|-------------|---------------------|

**Ochre—**

|          |         |                     |
|----------|---------|---------------------|
| France,  | 46 cks. | B. & F. Wf. Co.     |
| "        | 34      | Hernu, Peron, & Co. |
| Spain,   | 18      | Silicate Paint Co.  |
| Holland, | 35      | Phillips & Graves   |

**Oxalic Acid—**

|          |        |                 |
|----------|--------|-----------------|
| Holland, | 5 pks. | Beresford & Co. |
|----------|--------|-----------------|

**Phosphate—**

|       |       |                  |
|-------|-------|------------------|
| Bona, | 1,700 | R. England & Co. |
|-------|-------|------------------|

**Phosphate of Lime—**

|          |        |                      |
|----------|--------|----------------------|
| Holland, | 101 t. | Anglo-Contl. G. Wks. |
| Belgium, | 190    | West & Penrose       |

**Pitch—**

|          |           |                |
|----------|-----------|----------------|
| Germany, | 100 brls. | C. B. Leighton |
|----------|-----------|----------------|

**Plumbago—**

|            |           |                                  |
|------------|-----------|----------------------------------|
| Ceylon,    | 50 brls.  | Doulton & Co.                    |
| Germany,   | 17 cks.   | J. Barber & Co.                  |
| "          | 97        | B. Gallaway                      |
| E. Indies, | 39        | A. B. Curtis & Co.               |
| Ceylon,    | 305       | Williams, Torrey, & Co.          |
| Germany,   | 338 brls. | G. Ward & Son                    |
| Ceylon,    | 113       | 185 cks. J. Thredder, Son, & Co. |

**Potash—**

|            |        |               |
|------------|--------|---------------|
| U. States, | 168 c. | Charles & Fox |
|------------|--------|---------------|

**Potassium Carbonate—**

|          |       |                  |
|----------|-------|------------------|
| France,  | 69 c. | J. A. Reid       |
| Germany, | 110   | A. J. Luke & Co. |
| Holland, | 40    | "                |
| France,  | 160   | Petri Bros.      |

**Potassium Oxalate—**

|          |        |                 |
|----------|--------|-----------------|
| Holland, | 4 pks. | Beresford & Co. |
|----------|--------|-----------------|

**Potassium Sulphate—**

|          |          |                  |
|----------|----------|------------------|
| Belgium, | 200 pks. | F. W. Berk & Co. |
|----------|----------|------------------|

**Pumice Stone—**

|         |      |                 |
|---------|------|-----------------|
| Italy,  | 5 t. | Union L. Co.    |
| "       | 3    | Stobbs & Wilson |
| France, | 5    | S. Fellingham   |
| Italy,  | 1    | A. Kent         |

**Pyrites—**

|        |          |                         |
|--------|----------|-------------------------|
| Spain, | 1,965 t. | C. Tennant, Sons, & Co. |
|--------|----------|-------------------------|

**Rosin—**

|            |             |                        |
|------------|-------------|------------------------|
| E. Indies, | 4,539 brls. | Prod. Brokers' Co.     |
| France,    | 13          | Burrell & Co.          |
| "          | 13          | F. & S. Chiesman & Co. |
| Canada,    | 150         | M. D. Co.              |
| U. States, | 6,350       | H. Hill & Sons         |
| France,    | 29          | W. Harrison & Co.      |

**Saltpetre—**

|          |         |                     |
|----------|---------|---------------------|
| Germany, | 44 cks. | J. Hall & Son       |
| "        | 10      | 70 kgs. Petri Bros. |
| "        | 40      | P. Hecker & Co.     |
| "        | 8       | L. & I. Dk. Co.     |

**Soda—**

|          |        |                    |
|----------|--------|--------------------|
| Holland, | 200 c. | R. W. Greeff & Co. |
|----------|--------|--------------------|

**Starch—**

|          |         |                     |
|----------|---------|---------------------|
| Germany, | 56 pks. | Phillips & Graves   |
| France,  | 250     | B. & F. Wf. Co.     |
| Germany, | 57      | J. Hall, jr., & Co. |
| Belgium, | 100     | Leach & Co.         |
| "        | 909     | E. & T. Pink        |
| Holland, | 60      | G. Rahn & Co.       |
| "        | 200     | Hernu, Peron, & Co. |
| "        | 195     | Phillips & Graves   |
| Belgium, | 202     | T. H. Lee           |
| "        | 257     | F. Claydon & Co.    |
| Holland, | 40      | Pillman & Phillips  |

**Stearine—**

|            |          |                    |
|------------|----------|--------------------|
| France,    | 10 cks.  | L. & I. D. Jt. Co. |
| Belgium,   | 25 bgs.  | Union L. Co.       |
| U. States, | 10 brls. | L. & I. Dk. Co.    |
| "          | 30 hds.  | Beresford & Co.    |
| France,    | 100 bgs. | Walbaum & Tosetti  |
| Belgium,   | 220      | H. Hill & Sons     |

**Sulphur—**

|        |       |                      |
|--------|-------|----------------------|
| Italy, | 16 t. | J. Kitchin, Ltd.     |
| "      | 300   | Braedram Bros. & Co. |
| "      | 500   | W. T. Mills          |

**Sulphuric and Nitric Acid—**

|          |         |             |
|----------|---------|-------------|
| Belgium, | 80 pks. | Elkan & Co. |
|----------|---------|-------------|

**Talc—**

|            |      |                    |
|------------|------|--------------------|
| E. Indies, | £643 | A. B. Curtis & Co. |
|------------|------|--------------------|

**Tartaric Acid—**

|         |         |                   |
|---------|---------|-------------------|
| France, | 41 pks. | B. & F. Wf. Co.   |
| "       | 10      | F. C. Devon & Co. |
| "       | 8       | W. C. Bacon & Co. |

**Tartars—**

|        |         |                |
|--------|---------|----------------|
| Italy, | 16 pks. | Howards & Sons |
|--------|---------|----------------|

**Turpentine—**

|          |           |                          |
|----------|-----------|--------------------------|
| Germany, | 300 brls. | Prod. Brokers' Co., Ltd. |
|----------|-----------|--------------------------|

**Ultramarine—**

|            |       |   |
|------------|-------|---|
| U. States, | 3,350 | " |
|------------|-------|---|

**Varnish—**

|          |         |                     |
|----------|---------|---------------------|
| Holland, | 17 pks. | Hernu, Peron, & Co. |
|----------|---------|---------------------|

**White Lead—**

|          |         |                   |
|----------|---------|-------------------|
| Holland, | 14 pks. | Phillips & Graves |
| "        | 57 cks. | Randall Bros      |

**Wood Pulp—**

|          |          |                         |
|----------|----------|-------------------------|
| Sweden,  | 800 pks. | W. E. Bott & Co.        |
| Holland, | 860      | E. J. & W. Goldsmith    |
| Sweden,  | 480      | Henderson, Craig, & Co. |
| Germany, | 501      | W. Friedlaender         |
| Sweden,  | 150      | Tough & Henderson       |
| Norway,  | 250      | W. G. O. Krammes        |
| "        | 350      | Christophersen & Co.    |
| "        | 091      | W. G. Taylor & Co.      |

**Zinc Oxide—**

|          |          |                |
|----------|----------|----------------|
| Holland, | 25 brls. | M. Ashby, Ltd. |
| "        | 10 cks.  | J. Matton      |

**LIVERPOOL.**

Week ending January 30th.

**Alum—**

|            |         |   |
|------------|---------|---|
| Rotterdam, | 80 cks. | " |
|------------|---------|---|

**Ammonia—**

|           |           |   |
|-----------|-----------|---|
| New York, | 50 flasks | " |
|-----------|-----------|---|

**Ammonium Sulphate—**

|             |          |   |
|-------------|----------|---|
| Marseilles, | 17 brls. | " |
|-------------|----------|---|

**Barytes—**

|          |         |   |
|----------|---------|---|
| Hamburg, | 29 cks. | " |
|----------|---------|---|

**Bone Meal—**

|         |            |   |
|---------|------------|---|
| Bombay, | 1,000 bgs. | " |
|---------|------------|---|

**Borax—**

|             |            |                   |
|-------------|------------|-------------------|
| Valparaiso, | 1,809 sks. | Hainsworth Watson |
|-------------|------------|-------------------|

**Caoutchouc—**

|   |     |   |
|---|-----|---|
| " | 800 | " |
|---|-----|---|

**Castor Oil—**

|        |        |        |
|--------|--------|--------|
| Havre, | 11 cs. | Cunard |
|--------|--------|--------|

**Marseilles,**

|   |           |                 |
|---|-----------|-----------------|
| " | 385 brls. | S. S. Co., Ltd. |
|---|-----------|-----------------|

**Calcutta,**

|   |         |             |
|---|---------|-------------|
| " | 350 cs. | Ralli Bros. |
|---|---------|-------------|

**Caustic Soda—**

|          |        |   |
|----------|--------|---|
| Hamburg, | 5 cks. | " |
|----------|--------|---|

**Chemicals (otherwise undescribed)**

|          |       |   |
|----------|-------|---|
| Hamburg, | 1 cs. | " |
|----------|-------|---|

**Colours—**

|          |       |   |
|----------|-------|---|
| Hamburg, | 5 cs. | " |
|----------|-------|---|

**Cottonseed Oil—**

|          |   |   |
|----------|---|---|
| Antwerp, | 6 | " |
|----------|---|---|

**Rotterdam,**

|   |   |   |
|---|---|---|
| " | 2 | " |
|---|---|---|

**New York,**

|   |         |         |
|---|---------|---------|
| " | 5 brls. | M. Bell |
|---|---------|---------|

**N. Orleans,**

|   |          |                |
|---|----------|----------------|
| " | 850 bls. | J. Glynn & Son |
|---|----------|----------------|

**New York,**

|   |     |                    |
|---|-----|--------------------|
| " | 200 | Thompson & Bedford |
|---|-----|--------------------|

**Cream of Tartar—**

|            |        |                |
|------------|--------|----------------|
| Barcelona, | 5 cks. | Sachse & Klemm |
|------------|--------|----------------|

**St. Nazaire,**

|   |        |   |
|---|--------|---|
| " | 5 bts. | " |
|---|--------|---|

**Tarragona,**

|   |        |   |
|---|--------|---|
| " | 5 bts. | " |
|---|--------|---|

**Dextrine—**

|          |          |   |
|----------|----------|---|
| Stettin, | 125 bgs. | " |
|----------|----------|---|

**Dyestuffs—**

|           |         |                    |
|-----------|---------|--------------------|
| Cochineal | 14 bgs. | Rosing Bros. & Co. |
|-----------|---------|--------------------|

**Colon,**

|   |         |   |
|---|---------|---|
| " | 14 bgs. | " |
|---|---------|---|

**Extracts**

|        |           |                 |
|--------|-----------|-----------------|
| Fiume, | 430 brls. | Oak Extract Co. |
|--------|-----------|-----------------|

**Baltimore,**

|   |    |   |
|---|----|---|
| " | 15 | " |
|---|----|---|

**Bordeaux,**

|   |     |         |
|---|-----|---------|
| " | 115 | 10 cks. |
|---|-----|---------|

**Marseilles,**

|   |           |   |
|---|-----------|---|
| " | 466 chts. | " |
|---|-----------|---|

**Indigo**

|           |           |   |
|-----------|-----------|---|
| Calcutta, | 466 chts. | " |
|-----------|-----------|---|

**Logwood**

|              |        |   |
|--------------|--------|---|
| Black River, | 523 t. | " |
|--------------|--------|---|

**Savannah La Mar,**

|   |     |       |
|---|-----|-------|
| " | 332 | 13 c. |
|---|-----|-------|

**Myrabolams**

|         |            |   |
|---------|------------|---|
| Bombay, | 1 199 bgs. | " |
|---------|------------|---|

**Hamburg,**

|   |       |   |
|---|-------|---|
| " | 1 cs. | " |
|---|-------|---|

**Orchella**

|             |        |                      |
|-------------|--------|----------------------|
| Valparaiso, | 8 bls. | Kaltenbach & Schmitz |
|-------------|--------|----------------------|

**Shumac**

|          |          |   |
|----------|----------|---|
| Palermo, | 400 bgs. | " |
|----------|----------|---|

**Valonia**

|         |        |                  |
|---------|--------|------------------|
| Smyrna, | 260 t. | G. Essayan & Co. |
|---------|--------|------------------|

**Farina—**

|        |         |   |
|--------|---------|---|
| Fiume, | 90 bgs. | " |
|--------|---------|---|

**Stettin,**

|   |     |   |
|---|-----|---|
| " | 250 | " |
|---|-----|---|

**Glucose—**

|           |           |                    |
|-----------|-----------|--------------------|
| New York, | 100 brls. | T. M. Duche & Sons |
|-----------|-----------|--------------------|

**Boston,**

|   |     |   |
|---|-----|---|
| " | 500 | " |
|---|-----|---|

**New York,**

|   |     |   |
|---|-----|---|
| " | 250 | " |
|---|-----|---|

**Glue—**

|          |         |   |
|----------|---------|---|
| Hamburg, | 20 bgs. | " |
|----------|---------|---|

**St. Nazaire,**

|   |         |   |
|---|---------|---|
| " | 64 cks. | " |
|---|---------|---|

**Marseilles,**

|   |    |          |
|---|----|----------|
| " | 38 | 105 bls. |
|---|----|----------|

**Boston,**

|   |        |   |
|---|--------|---|
| " | 12 cs. | 6 |
|---|--------|---|

**Stettin,**

|   |           |                  |
|---|-----------|------------------|
| " | 64 bskts. | 14 cts. R. Woods |
|---|-----------|------------------|

**Boston,**

|   |         |                 |
|---|---------|-----------------|
| " | 3 brls. | Johansen & Dahl |
|---|---------|-----------------|

**Iodine—**

|             |          |                 |
|-------------|----------|-----------------|
| Valparaiso, | 14 brls. | H. Folsch & Co. |
|-------------|----------|-----------------|

**"**

|   |    |                 |
|---|----|-----------------|
| " | 13 | A. Gibbs & Sons |
|---|----|-----------------|

**Lactic Acid—**

|         |        |                         |
|---------|--------|-------------------------|
| Boston, | 5 kgs. | 5 brls. J. Taylor & Co. |
|---------|--------|-------------------------|

**Limestone—**

|          |        |   |
|----------|--------|---|
| Antwerp, | 2 cts. | " |
|----------|--------|---|

**Manganese Ore—**

|         |          |                          |
|---------|----------|--------------------------|
| Huelva, | 1,300 t. | Darwen & Mostyn Iron Co. |
|---------|----------|--------------------------|

**Mica—**

|           |          |   |
|-----------|----------|---|
| Calcutta, | 12 chts. | " |
|-----------|----------|---|

**Ochre—**

|             |
|-------------|
| Marseilles, |
|-------------|



|                            |               |                           |
|----------------------------|---------------|---------------------------|
| <b>Logwood</b>             |               |                           |
| Black River,               | 277 t.        |                           |
| Negril,                    | 110           |                           |
| Holyak,                    | 413           |                           |
| <b>Farina—</b>             |               |                           |
| Stettin,                   | 4,442 bgs.    | Stott, Coker, & Co.       |
| Hamburg,                   | 100           |                           |
| <b>Gelatine—</b>           |               |                           |
| Rouen,                     | 10 cs.        |                           |
| <b>Glucose—</b>            |               |                           |
| New York,                  | 100 brls.     |                           |
| <b>Glue—</b>               |               |                           |
| Rouen,                     | 40 cks.       |                           |
| Treport,                   | 9 10 bls.     |                           |
| Rotterdam,                 | 20 bgs.       |                           |
| Hamburg,                   | 30            |                           |
| <b>Lead Acetate—</b>       |               |                           |
| Rouen,                     | 80 cks.       |                           |
| <b>Limestone—</b>          |               |                           |
| Antwerp,                   | 2 cs.         | J. T. Fletcher & Co.      |
| "                          | 1 crt.        |                           |
| <b>Litharge—</b>           |               |                           |
| Rotterdam,                 | 22 cks.       |                           |
| <b>Naphthaline—</b>        |               |                           |
| Antwerp,                   | 7 bgs.        |                           |
| <b>Ochre—</b>              |               |                           |
| Treport,                   | 63 cks.       |                           |
| <b>Oxalic Acid—</b>        |               |                           |
| Rotterdam,                 | 15 cks.       |                           |
| <b>Pitch—</b>              |               |                           |
| Rotterdam,                 | 36 cks.       |                           |
| <b>Potash—</b>             |               |                           |
| Hamburg,                   | 2 cks.        |                           |
| Treport,                   | 22            |                           |
| Rotterdam,                 | 5             |                           |
| <b>Potassium Sulphate—</b> |               |                           |
| Antwerp,                   | 200 bgs.      |                           |
| <b>Pyrites—</b>            |               |                           |
| Huelva,                    | 1,160 t.      |                           |
| <b>Rosin—</b>              |               |                           |
| Wilmington,                | 4,084 brls.   |                           |
| <b>Starch—</b>             |               |                           |
| Hamburg,                   | 132 cs. 1 ck. |                           |
| Newport News,              | 1,350 sks.    |                           |
| New York,                  | 700 bgs.      |                           |
| Ghent,                     | 60            | J. T. Fletcher & Co.      |
| "                          | 160           |                           |
| Antwerp,                   | 295           |                           |
| Rotterdam,                 | 15            |                           |
| <b>Tartaric Acid—</b>      |               |                           |
| Rotterdam,                 | 36 cks.       |                           |
| <b>Turpentine—</b>         |               |                           |
| Wilmington,                | 200 brls.     |                           |
| <b>Ultramarine—</b>        |               |                           |
| Hamburg,                   | 3 cks.        |                           |
| <b>White Lead—</b>         |               |                           |
| Rotterdam,                 | 6 cks.        |                           |
| Antwerp,                   | 7             |                           |
| <b>Wood Pulp—</b>          |               |                           |
| Drontheim,                 | 7,050 bls.    | W. Gallagher & Son        |
| Christiania,               | 1,298         | Manchester Ship Canal Co. |
| Ahus,                      | 5,334         |                           |
| Frederikstad,              | 1,595         | Juhnsen & Jorgensen       |
| Christiania,               | 160           |                           |
| Holmestrand,               | 1,224         |                           |
| Drammen,                   | 170           | 253 3/4 bds. W. H. Ingram |
| Christiania,               | 2 041         | 200                       |
| <b>Zinc Ashes—</b>         |               |                           |
| Stettin,                   | 15 cks.       | Stott, Coker, & Co.       |
| <b>Zinc Oxide—</b>         |               |                           |
| Rotterdam,                 | 75 brls.      |                           |

**HULL.**

Week ending February 1st.

|                  |               |                     |
|------------------|---------------|---------------------|
| <b>Alkali—</b>   |               |                     |
| Bremen,          | 2 cks. 5 cs.  | Veltmann & Co.      |
| <b>Alum—</b>     |               |                     |
| Rotterdam,       | 38 cks.       | W. & C. L. Ringrose |
| <b>Arsenic—</b>  |               |                     |
| Hamburg,         | 50 cks.       | E. & H. Allison     |
| <b>Asbestos—</b> |               |                     |
| Rotterdam,       | 2 bls. 2 pks. | Hutchinson & Son    |
| <b>Barytes—</b>  |               |                     |
| Bremen,          | 10 cks.       |                     |
| Antwerp,         | 212           | Bailey & Leatham    |
| Rotterdam,       | 48            | Hutchinson & Son    |

|                                          |                     |                                  |
|------------------------------------------|---------------------|----------------------------------|
| <b>Chemicals (otherwise undescribed)</b> |                     |                                  |
| Hamburg,                                 | 10 cks. 4 pks.      | Wilson, Sons, & Co., Ltd.        |
| Copenhagen,                              | 1 1 cs.             | "                                |
| Bremen,                                  | 1                   | Veltmann & Co.                   |
| Rotterdam,                               | 2                   | W. & C. L. Ringrose              |
| Antwerp,                                 | 46 pks.             | Wilson, Sons, & Co., Ltd.        |
| <b>Colours—</b>                          |                     |                                  |
| Hamburg,                                 | 5 cs.               | Wilson, Sons, & Co., Ltd.        |
| Stettin,                                 | 8 cks.              | "                                |
| Rotterdam,                               | 3 1 cs. 2 brls.     | Hutchinson & Son                 |
| Antwerp,                                 | 1 cs.               | Bailey & Leatham                 |
| Danzig,                                  | 10 brls.            | "                                |
| Rotterdam,                               | 62 cks. 9 cs. 1 kg. | W. & C. L. Ringrose              |
| Antwerp,                                 | 2 50 pks. 4 brls.   | Wilson, Sons, & Co., Ltd.        |
| <b>Creosote Salt—</b>                    |                     |                                  |
| Rotterdam,                               | 2 brls.             | W. & C. L. Ringrose              |
| <b>Dextrine—</b>                         |                     |                                  |
| Stettin,                                 | 300 bgs.            | Wilson, Sons, & Co., Ltd.        |
| <b>Dyestuffs—</b>                        |                     |                                  |
| Alizarine                                |                     |                                  |
| Rotterdam,                               | 32 cks.             | W. & C. L. Ringrose              |
| <b>Extracts</b>                          |                     |                                  |
| Libau,                                   | 120 cs.             | Wilson, Sons, & Co., Ltd.        |
| <b>Logwood</b>                           |                     |                                  |
| Hamburg,                                 | 30 bgs.             | Wilson, Sons, & Co., Ltd.        |
| <b>Valonia</b>                           |                     |                                  |
| Smyrna,                                  | 1 bgs. 201 t.       |                                  |
| <b>Farina—</b>                           |                     |                                  |
| Stettin,                                 | 150 bgs.            | Wilson, Sons, & Co., Ltd.        |
| Harlingen,                               | 20                  | 44 cs. Wilson, Sons, & Co., Ltd. |
| Ghent,                                   | 100                 | Hutchinson & Son                 |
| Harlingen,                               | 50                  | White & Son                      |
| Hamburg,                                 | 100                 | "                                |
| <b>Glucose—</b>                          |                     |                                  |
| Amsterdam,                               | 50 bgs.             | Hutchinson & Son                 |
| <b>Glue—</b>                             |                     |                                  |
| Hamburg,                                 | 14 brls.            | Wilson, Sons, & Co., Ltd.        |
| <b>Ochre—</b>                            |                     |                                  |
| Hamburg,                                 | 1 ck.               | Wilson, Sons, & Co., Ltd.        |
| <b>Paint—</b>                            |                     |                                  |
| Boston,                                  | 200 cs.             | Wilson, Sons, & Co., Ltd.        |
| <b>Phosphate—</b>                        |                     |                                  |
| Harlingen,                               | 13 bgs.             | "                                |
| Ghent,                                   | 510                 | 30 t. Wilson, Sons, & Co., Ltd.  |
| <b>Pitch—</b>                            |                     |                                  |
| Rotterdam,                               | 33 cks.             | W. & C. L. Ringrose              |
| Amsterdam,                               | 14                  | Hutchinson & Son                 |
| <b>Plumbago—</b>                         |                     |                                  |
| Ghent,                                   | 22 cks.             | "                                |
| <b>Potash—</b>                           |                     |                                  |
| Rotterdam,                               | 2 cks.              | Hutchinson & Son                 |
| <b>Pyrites—</b>                          |                     |                                  |
| Huelva,                                  | 500 t.              | "                                |
| <b>Rosin—</b>                            |                     |                                  |
| Savannah,                                | 4,650 brls.         | "                                |
| <b>Salt—</b>                             |                     |                                  |
| Hamburg,                                 | 14 cks.             | Wilson, Sons, & Co., Ltd.        |
| <b>Saltpetre—</b>                        |                     |                                  |
| Hamburg,                                 | 6 cks.              | Wilson, Sons, & Co., Ltd.        |
| Rotterdam,                               | 30 bgs.             | W. & C. L. Ringrose              |
| <b>Soap—</b>                             |                     |                                  |
| Boston,                                  | 200 cs.             | Wilson, Sons, & Co., Ltd.        |
| <b>Starch—</b>                           |                     |                                  |
| Bremen,                                  | 2,423 cs.           | Veltmann & Co.                   |
| Amsterdam,                               | 40                  | W. & C. L. Ringrose              |
| <b>Stearine—</b>                         |                     |                                  |
| Antwerp,                                 | 26 bgs.             | Bailey & Leatham                 |
| <b>Tallow—</b>                           |                     |                                  |
| Boston,                                  | 100 tcs.            | Wilson, Sons, & Co., Ltd.        |
| <b>Tartaric Acid—</b>                    |                     |                                  |
| Rotterdam,                               | 2 cks.              | Hutchinson & Son                 |

|                     |             |                           |
|---------------------|-------------|---------------------------|
| <b>Treacle—</b>     |             |                           |
| Hamburg,            | 1 cs.       | Wilson, Sons, & Co., Ltd. |
| Boston,             | 425         | "                         |
| <b>Turpentine—</b>  |             |                           |
| Savannah,           | 1,500 brls. | "                         |
| <b>Ultramarine—</b> |             |                           |
| Rotterdam,          | 13 pks.     | W. & C. L. Ringrose       |
| <b>Yarnish—</b>     |             |                           |
| Antwerp,            | 3 brls.     | Wilson, Sons, & Co., Ltd. |
| <b>Waste Salt—</b>  |             |                           |
| Hamburg,            | 500 bgs.    | Furley & Co.              |
| <b>White Lead—</b>  |             |                           |
| Rotterdam,          | 33 cks.     | W. & C. L. Ringrose       |
| Amsterdam,          | 13          | "                         |
| <b>Wood Pulp—</b>   |             |                           |
| Christiania,        | 1,122 bls.  | Wilson, Sons, & Co., Ltd. |
| Hango,              | 350         | J. Good & Sons            |
| <b>Zinc Oxide—</b>  |             |                           |
| Antwerp,            | 55 cks.     | Bailey & Leatham          |

**GLASGOW.**

Week ending February 6th.

|                         |                         |                  |
|-------------------------|-------------------------|------------------|
| <b>Acetate of Lime—</b> |                         |                  |
| Philadelphia,           | 1,309 bgs.              |                  |
| <b>Acetic Acid—</b>     |                         |                  |
| Rotterdam,              | 10 blns.                | J. Rankine & Son |
| <b>Aniline—</b>         |                         |                  |
| Rotterdam,              | 10 cks. 6 cs.           | J. Rankine & Son |
| <b>Arachide Oil—</b>    |                         |                  |
| Rotterdam,              | 5 cks.                  | J. Rankine & Son |
| <b>Barium Sulphate—</b> |                         |                  |
| Ghent,                  | 300 bgs.                | "                |
| <b>Barytes—</b>         |                         |                  |
| Rotterdam,              | 17 cks.                 | J. Rankine & Son |
| "                       | 46 pks.                 | "                |
| <b>Bone Meal—</b>       |                         |                  |
| Bombay,                 | 1,000 bgs.              | W. R. Giffen     |
| <b>Caoutchouc—</b>      |                         |                  |
| Hamburg,                | 88 bls.                 | "                |
| <b>Castor Oil—</b>      |                         |                  |
| Marseilles,             | 340 brls.               | "                |
| <b>Cobalt Oxide—</b>    |                         |                  |
| Rotterdam,              | 3 cs.                   | "                |
| <b>Colours—</b>         |                         |                  |
| Rotterdam,              | 5 cks. 1 cs. 42 pks.    | "                |
| Hamburg,                | 1                       | "                |
| <b>Cream of Tartar—</b> |                         |                  |
| Marseilles,             | 6 cks.                  | "                |
| <b>Dried Blood—</b>     |                         |                  |
| Rouen,                  | 13 cs.                  | "                |
| <b>Dyestuffs—</b>       |                         |                  |
| Alizarine               |                         |                  |
| Rotterdam,              | 201 cks. 2 cs. 18 brls. | J. Rankine & Son |
| "                       | 40 pks.                 | "                |
| <b>Argols</b>           |                         |                  |
| Bordeaux,               | 86 cks.                 | "                |
| <b>Cutch</b>            |                         |                  |
| Rangoon,                | 696 bxs.                | "                |
| Boston,                 | 5 brls.                 | "                |
| <b>Extracts</b>         |                         |                  |
| Marseilles,             | 25 brls.                | "                |
| <b>Farina—</b>          |                         |                  |
| Hamburg,                | 158 bgs.                | "                |
| Delfeyl,                | 850                     | "                |
| <b>Glucose—</b>         |                         |                  |
| New York,               | 300 brls.               | "                |
| Philadelphia,           | 390                     | "                |
| <b>Glue—</b>            |                         |                  |
| Rotterdam,              | 20 bgs.                 | J. Rankine & Son |
| Hamburg,                | 7 cks.                  | "                |
| <b>Ochre—</b>           |                         |                  |
| Marseilles,             | 20 cks.                 | "                |
| <b>Paraffin Scale—</b>  |                         |                  |
| New York,               | 700 brls.               | "                |
| <b>Plumbago—</b>        |                         |                  |
| Hamburg,                | 70 brls.                | "                |
| <b>Pyrites—</b>         |                         |                  |
| Huelva,                 | 1,595 t.                | "                |
| <b>Rosin—</b>           |                         |                  |
| New York,               | 2,188 brls.             | John Parker      |
| "                       | 511                     | "                |
| <b>Salt—</b>            |                         |                  |
| New York,               | 300 bgs.                | "                |

|                         |                |                  |
|-------------------------|----------------|------------------|
| <b>Sodium Chlorate—</b> |                |                  |
| Rouen,                  | 18 cks.        |                  |
| <b>Starch—</b>          |                |                  |
| Rotterdam,              | 70 cs.         | J. Rankine & Son |
| New York,               | 250 bgs.       | "                |
| <b>Tartar</b>           |                |                  |
| Bordeaux,               | 10 cks.        | "                |
| <b>Tartaric Acid—</b>   |                |                  |
| Marseilles,             | 73 brls. 6 cs. | "                |
| <b>Tin Oxide—</b>       |                |                  |
| Rotterdam,              | 2 cks.         | "                |
| <b>Treacle—</b>         |                |                  |
| New York,               | 25 brls.       | J. Rankine & Son |
| Rotterdam,              | 12 cks.        | "                |
| <b>Waste Salt—</b>      |                |                  |
| Hamburg,                | 277 cks.       | "                |
| <b>White Lead—</b>      |                |                  |
| Rotterdam,              | 12 cks.        | J. Rankine & Son |
| <b>Wood Pulp—</b>       |                |                  |
| Skein,                  | 200 bls.       | "                |
| Christiania,            | 661            | "                |
| <b>Zinc Oxide—</b>      |                |                  |
| New York,               | 50 brls.       | "                |
| <b>Zinc White—</b>      |                |                  |
| Rotterdam,              | 20 cks.        | J. Rankine & Son |

**TYNE.**

Week ending February 1st.

|                         |                  |                |
|-------------------------|------------------|----------------|
| <b>Alum Earth—</b>      |                  |                |
| Hamburg,                | 16 cks.          | Tyne S. S. Co. |
| <b>Barium Chlorate—</b> |                  |                |
| Rotterdam,              | 420 bgs.         | Tyne S. S. Co. |
| Hamburg,                | 186              | "              |
| <b>Barytes—</b>         |                  |                |
| Rotterdam,              | 31 cks. 357 bgs. | Tyne S. S. Co. |
| Antwerp,                | 375              | "              |
| <b>Colours—</b>         |                  |                |
| Antwerp,                | 2 brls.          | Tyne S. S. Co. |
| <b>Farina—</b>          |                  |                |
| Antwerp,                | 10 bgs.          | Tyne S. S. Co. |
| Hamburg,                | 20               | "              |
| <b>Glue—</b>            |                  |                |
| Antwerp,                | 1 ck.            | Tyne S. S. Co. |
| <b>Limestone—</b>       |                  |                |
| Antwerp,                | 14 crts.         | Tyne S. S. Co. |
| <b>Potash—</b>          |                  |                |
| Antwerp,                | 1 brl.           | Tyne S. S. Co. |
| <b>Rosin—</b>           |                  |                |
| Savannah,               | 2,158 brls.      | "              |
| <b>Soap—</b>            |                  |                |
| Rotterdam,              | 4 cs.            | Tyne S. S. Co. |
| <b>Starch—</b>          |                  |                |
| Rotterdam,              | 120 cs.          | Tyne S. S. Co. |
| <b>Stearine—</b>        |                  |                |
| Antwerp,                | 16 bgs.          | Tyne S. S. Co. |
| <b>Tallow—</b>          |                  |                |
| Antwerp,                | 16 bgs.          | Tyne S. S. Co. |
| <b>White Lead—</b>      |                  |                |
| Antwerp,                | 28 brls.         | Tyne S. S. Co. |
| <b>Wood Pulp—</b>       |                  |                |
| Gotenburg,              | 58 bls.          | "              |
| Copenhagen,             | 220              | "              |
| <b>Zinc Ashes—</b>      |                  |                |
| Trondhjem,              | 9 cks.           | "              |
| <b>Zinc Oxide—</b>      |                  |                |
| Antwerp,                | 25 brls.         | Tyne S. S. Co. |

**GOOLE.**

Week ending January 29th.

|                           |          |  |
|---------------------------|----------|--|
| <b>Antimony—</b>          |          |  |
| Boulogne,                 | 1 ck.    |  |
| <b>Barytes—</b>           |          |  |
| Rotterdam,                | 98 bgs.  |  |
| <b>Caoutchouc—</b>        |          |  |
| Boulogne,                 | 20 cks.  |  |
| Hamburg,                  | 2 cs.    |  |
| <b>Carbonate of Lime—</b> |          |  |
| Antwerp,                  | 133 bgs. |  |
| <b>Colours—</b>           |          |  |
| Hamburg,                  | 22 cks.  |  |
| <b>Dyestuffs—</b>         |          |  |
| Alizarine                 |          |  |
| Rotterdam,                | 56 cks.  |  |
| <b>Logwood</b>            |          |  |
| Luguna,                   | 250 t.   |  |
| <b>Madder</b>             |          |  |
| Rotterdam,                | 1 ck.    |  |



|                                          |                 |
|------------------------------------------|-----------------|
| <b>Dyestuffs</b> (otherwise undescribed) |                 |
| Rotterdam,                               | 350 cks. 56 cs. |
| Boulogne,                                | 22 25 pks. 11   |
| <b>Farina</b>                            |                 |
| Hamburg,                                 | 50 bgs.         |
| Delfsryhl,                               | 1,141           |
| <b>Glucose</b>                           |                 |
| Hamburg,                                 | 113 cks.        |

|                  |          |
|------------------|----------|
| <b>Potash</b>    |          |
| Antwerp,         | 16 dms.  |
| Dunkirk,         | 2        |
| <b>Saltpetre</b> |          |
| Hamburg,         | 5 cks.   |
| Rotterdam,       | 430 bgs. |
| <b>Wood Pulp</b> |          |
| Hamburg,         | 100 bls. |

|                                          |          |
|------------------------------------------|----------|
| <b>GRIMSBY.</b>                          |          |
| Week ending February 1st.                |          |
| <b>Caoutchouc</b>                        |          |
| Hamburg,                                 | 2 pks.   |
| Antwerp,                                 | 1 cs.    |
| <b>Chemicals</b> (otherwise undescribed) |          |
| Rotterdam,                               | 44 pkgs. |
| Hamburg,                                 | 146 cs.  |

|                   |                 |
|-------------------|-----------------|
| <b>Colours</b>    |                 |
| Rotterdam,        | 9 cks.          |
| Hamburg,          | 5 7 cs. 24 pks. |
| Antwerp,          | 95              |
| <b>Farina</b>     |                 |
| Hamburg,          | 150 bgs.        |
| <b>Waste Salt</b> |                 |
| Hamburg,          | 525 pks.        |

## EXPORTS OF CHEMICAL PRODUCTS OF THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

### LONDON.

Week ending February 5th.

|                                          |                           |
|------------------------------------------|---------------------------|
| <b>Acids</b>                             |                           |
| Canton,                                  | 12 cs. £12                |
| Algoa Bay,                               | 11 12                     |
| <b>Alkali</b>                            |                           |
| Singapore,                               | 7 c. £9                   |
| Bombay,                                  | 8 6                       |
| Lynton,                                  | 11 t. 8 41                |
| <b>Alum Cake</b>                         |                           |
| Calcutta,                                | 18 t. 3 c. £65            |
| <b>Ammonia</b>                           |                           |
| Algoa Bay,                               | 33 cs. £50                |
| Barbadoes,                               | 7 c. 11                   |
| Yokohama,                                | 3 13                      |
| <b>Ammonium Carbonate</b>                |                           |
| Canterbury,                              | 5 cs. £10                 |
| Cape Town,                               | 10 21                     |
| B. Ayres,                                | 1 t. 9 c. 56              |
| <b>Ammonium Chloride</b>                 |                           |
| New York,                                | 6 cks. £42                |
| Genoa,                                   | 3 t. 67                   |
| Hogo,                                    | 1 6 c. 48                 |
| Antwerp,                                 | 11 169                    |
| Cologne,                                 | 16 245                    |
| Bagdad,                                  | 20 brls. 72               |
| <b>Ammonium Sulphate</b>                 |                           |
| Oswend,                                  | 200 t. 18 c. £1,726       |
| Demerara,                                | 72 640                    |
| Antwerp,                                 | 26 225                    |
| Dunkirk,                                 | 150 1,350                 |
| Ghent,                                   | 26 221                    |
| <b>Arenic</b>                            |                           |
| Amsterdam,                               | 10 cks. £36               |
| <b>Barium Nitrate</b>                    |                           |
| New York,                                | 2 t. 2 c. £40             |
| <b>Bone Meal</b>                         |                           |
| Rouen,                                   | 100 t. £374               |
| <b>Borax</b>                             |                           |
| Sydney,                                  | 2 t. £43                  |
| <b>Calcium Chloride</b>                  |                           |
| Wellington,                              | 10 t. 8 c. £45            |
| <b>Caustic Soda</b>                      |                           |
| New York,                                | 5 t. 6 c. £75             |
| Cape Town,                               | 1 4 34                    |
| Brisbane,                                | 16 15 124                 |
| Malta,                                   | 11 5                      |
| Natal,                                   | 2 83                      |
| Melbourne,                               | 15 7                      |
| Sydney,                                  | 12 5                      |
| Wellington,                              | 6 7                       |
| Lynton,                                  | 10 13 76                  |
| Algoa Bay,                               | 3 4 87                    |
| <b>Chemicals</b> (otherwise undescribed) |                           |
| Treport,                                 | 4 t. 3 c. £200            |
| Barbadoes,                               | 17 cs. 10 cks. 59         |
| Dunedin,                                 | 16 16                     |
| Melbourne,                               | 2 10 crts. 31             |
| Algoa Bay,                               | 5 52 pkgs. 3 cks. 90      |
| Bombay,                                  | 4 1 t. 2 10 105           |
| Sydney,                                  | 7 30                      |
| Rotterdam,                               | 5 5 70                    |
| Christiania,                             | 1 50                      |
| Malta,                                   | 2 20                      |
| Penang,                                  | 5 15                      |
| <b>Citric Acid</b>                       |                           |
| Natal,                                   | 3 c. £18                  |
| Adelaide,                                | 3 19                      |
| Bombay,                                  | 5 18                      |
| Brussels,                                | 10 kgs. 2 t. 5 2 cks. 423 |
| Hamburg,                                 | 5 4 158                   |
| Antwerp,                                 | 1 32                      |
| <b>Coal Products</b>                     |                           |
| <b>Alizarine</b>                         |                           |
| Rouen,                                   | 1 ck. £27                 |
| Reval,                                   | 19 cs. 958                |
| Boston,                                  | 22 287                    |
| <b>Aniline Dyes</b>                      |                           |
| Melbourne,                               | 1 cs. £31                 |
| <b>Aniline Oil</b>                       |                           |
| Ghent,                                   | 5 cks. £85                |
| <b>Coal Tar Dyes</b>                     |                           |
| Yokohama,                                | 20 cs. £173               |

|                                         |                        |
|-----------------------------------------|------------------------|
| <b>Creosote</b>                         |                        |
| Antwerp,                                | 125 t. £219            |
| New York,                               | 1,000 brls. 450        |
| <b>Creosote Salts</b>                   |                        |
| Philadelphia,                           | 553 bgs. £320          |
| <b>Naphtha</b>                          |                        |
| Treport,                                | 103 brls. £274         |
| <b>Naphthaline</b>                      |                        |
| Treport,                                | 50 bgs. £30            |
| <b>Pitch</b>                            |                        |
| Boston,                                 | 81 cks. 500 brls. £313 |
| Alexandria,                             | 340 108                |
| Baltimore,                              | 1,197 bgs. 224         |
| Antwerp,                                | 2,062 t. 3,847         |
| Cette,                                  | 300 20                 |
| Delagoa Bay,                            | 75 kgs. 20             |
| <b>Pyridine</b>                         |                        |
| Stettin,                                | 13 cks. £110           |
| <b>Pyridine Bases</b>                   |                        |
| Hamburg,                                | 6 drs. £114            |
| <b>Tar</b>                              |                        |
| D-lagoa Bay,                            | 400 drs. £47           |
| Bombay,                                 | 50 10 cks. 10          |
| Natal,                                  | 525 18                 |
| <b>Tar Oil</b>                          |                        |
| Boston,                                 | 30 cks. £30            |
| <b>Coal Products</b> (otherwise undes.) |                        |
| Cape Town,                              | 250 pks. £25           |
| <b>Copper Sulphate</b>                  |                        |
| Cadiz,                                  | 1 t. £19               |
| Cette,                                  | 335 6 030              |
| <b>Corrosive Sublimite</b>              |                        |
| Lisbon,                                 | 1 cs. £15              |
| <b>Cream of Tartar</b>                  |                        |
| Wanganui,                               | 10 c. £50              |
| Natal,                                  | 12 58                  |
| Melbourne,                              | 1 t. 93                |
| Sydney,                                 | 3 3 312                |
| Brisbane,                               | 3 10                   |
| Algoa Bay,                              | 7 37                   |
| <b>Disinfectants</b>                    |                        |
| Sydney,                                 | 33 cs. £119            |
| Auckland,                               | 13 28                  |
| Algoa Bay,                              | 20 pkgs. 26            |
| Penang,                                 | 105 39                 |
| Melbourne,                              | 13 29                  |
| Cape Town,                              | 76 50                  |
| E. London,                              | 19 14                  |
| Bombay,                                 | 2 t. 13 c. 13          |
| Calcutta,                               | 32 drs. 35 cks. 77     |
| Marseilles,                             | 2 12                   |
| <b>Hydrofluoric Acid</b>                |                        |
| E. London,                              | 4 cs. £20              |
| <b>Magnesia</b>                         |                        |
| Alexandria,                             | 9 c. £15               |
| <b>Manure</b>                           |                        |
| Demerara,                               | 190 t. £1,900          |
| Rio de Janeiro,                         | 2 10 c. 20             |
| Guernsey,                               | 20 110                 |
| Rouen,                                  | 79 11 450              |
| Bordeaux,                               | 97 484                 |
| Genoa,                                  | 59 145                 |
| <b>Muriatic Acid</b>                    |                        |
| Cape Town,                              | 15 cs. £13             |
| <b>Nitric Acid</b>                      |                        |
| Foochow,                                | 4 cs. £11              |
| <b>Potash</b>                           |                        |
| Wellington,                             | 19 c. £46              |
| <b>Potassium Bichromate</b>             |                        |
| Wellington,                             | 1 t. £46               |
| <b>Potassium Chlorate</b>               |                        |
| Canterbury,                             | 5 c. £11               |
| Melbourne,                              | 6 22                   |
| <b>Potassium Cyanide</b>                |                        |
| Melbourne,                              | 10 cs. £143            |
| <b>Potassium Prussiate</b>              |                        |
| New York,                               | 10 cks. £189           |
| <b>Saltpetre</b>                        |                        |
| Sydney,                                 | 1 t. £23               |
| Melbourne,                              | 2 47                   |
| Delagoa Bay,                            | 1 24                   |
| Santos,                                 | 2 19 c. 71             |

|                            |                        |
|----------------------------|------------------------|
| <b>Sheep Dip</b>           |                        |
| Algoa Bay,                 | 29 t. 7 c. £963        |
| Delagoa Bay,               | 70 drs. 13             |
| Cape Town,                 | 200 50                 |
| B. Ayres,                  | 44 1,276               |
| E. London,                 | 32 16 755              |
| <b>Soda</b>                |                        |
| Algoa Bay,                 | 6 t. 14 c. £17         |
| Dunedin,                   | 15 16                  |
| <b>Soda Alkali</b>         |                        |
| Natal,                     | 1 t. 6 c. £5           |
| <b>Soda Crystals</b>       |                        |
| Colombo,                   | 6 c. £5                |
| Valparaiso,                | 20 t. £49              |
| <b>Soda Salts</b>          |                        |
| New York,                  | 5 t. 10 c. 3 cs. £122  |
| <b>Sodium Acetate</b>      |                        |
| Melbourne,                 | 1 t. 2 c. £18          |
| <b>Sodium Arseniate</b>    |                        |
| Sydney,                    | 1 t. £11               |
| <b>Sodium Bicarbonate</b>  |                        |
| Melbourne,                 | 1 t. £19               |
| <b>Sodium Hyposulphite</b> |                        |
| Melbourne,                 | 10 t. £66              |
| <b>Strontium Carbonate</b> |                        |
| New York,                  | 1 t. 11 c. £24         |
| <b>Strontium Nitrate</b>   |                        |
| New York,                  | 3 t. 1 c. £73          |
| <b>Sulphur</b>             |                        |
| Algoa Bay,                 | 7 t. 15 c. 50 cs. £110 |
| E. London,                 | 3 16 40                |
| <b>Sulphuric Acid</b>      |                        |
| Melbourne,                 | 3 t. 15 c. £35         |
| Natal,                     | 1 15 10                |
| <b>Tartaric Acid</b>       |                        |
| Natal,                     | 3 c. £19               |
| Melbourne,                 | 10 60                  |
| Adelaide,                  | 10 62                  |
| Cape Town,                 | 8 cks. 16              |
| Bombay,                    | 1 t. 5 194             |
| Sydney,                    | 1 t. 10 32             |
| Boulogne,                  | 5 32                   |
| Brisbane,                  | 18 cs. 3 69            |
| Algoa Bay,                 | 11 73                  |

### LIVERPOOL.

Week ending February 5th.

|                           |                      |
|---------------------------|----------------------|
| <b>Acetate of Lime</b>    |                      |
| Santos,                   | 1 t. 1 q. £10        |
| <b>Alum</b>               |                      |
| Halifax,                  | 2 t. 19 c. 3 q. £14  |
| Varna,                    | 2 5 1 10             |
| Melbourne,                | 2 11                 |
| Portland, O.,             | 9 1 45               |
| Alexandria,               | 7 35                 |
| Piraeus,                  | 4 15 22              |
| B. Ayres,                 | 9 17 1 48            |
| <b>Aluminous Cake</b>     |                      |
| Calcutta,                 | 100 t. £274          |
| Melbourne,                | 6 3 c. 2 t. 25       |
| <b>Ammonium Carbonate</b> |                      |
| Antwerp,                  | 1 t. £31             |
| Santos,                   | 12 c. 37             |
| Halifax,                  | 1 34                 |
| <b>Ammonium Chloride</b>  |                      |
| Gothenburg,               | 1 t. 8 c. £32        |
| Antwerp,                  | 1 6 33               |
| Beyrout,                  | 10 18                |
| Madras,                   | 1 11 1 q. 62         |
| Malaga,                   | 1 37                 |
| Gijon,                    | 1 1 2 43             |
| Bilbao,                   | 1 2 1 42             |
| Volo,                     | 3 5                  |
| <b>Ammonium Sulphate</b>  |                      |
| New York,                 | 25 t. 8 c. 3 q. £220 |
| Venice,                   | 10 3 1 86            |
| Genoa,                    | 10 9 4 95            |
| Philadelphia,             | 62 15 3 540          |
| Bordeaux,                 | 8 1 2 70             |
| Rouen,                    | 24 16 7 210          |
| Madeira,                  | 10 4                 |

|                         |                  |
|-------------------------|------------------|
| Palermo,                | 24 8 1 214       |
| Barcelona,              | 37 420           |
| Las Palmas,             | 34 13 2 219      |
| Valencia,               | 40 6 330         |
| Hamburg,                | 34 10 294        |
| <b>Bleaching Powder</b> |                  |
| Alexandria,             | 10 brls.         |
| Baltimore,              | 140 cks.         |
| Bilbao,                 | 30               |
| Boston,                 | 643              |
| Campano,                | 105              |
| Dunkirk,                | 17               |
| Genoa,                  | 32               |
| Halifax,                | 4                |
| Nantes,                 | 14               |
| Naples,                 | 26               |
| New York,               | 82               |
| Philadelphia,           | 29               |
| Rio de Janeiro,         | 11               |
| San Sebastian,          | 108              |
| <b>Boracic Acid</b>     |                  |
| Naples,                 | 12 c. £20        |
| Hamburg,                | 8 t. 17 4 q. 267 |
| Antwerp,                | 2 18 3 65        |
| <b>Borax</b>            |                  |
| Constantinople,         | 1 t. £21         |
| Montreal,               | 5 3 c. 103       |
| Piraeus,                | 3 2 6            |
| Portland, M.,           | 3 2              |
| Montreal,               | 5 2 2 q.         |
| Toronto,                | 7 4 2            |
| Madras,                 | 7 2 3 3          |
| Antwerp,                | 11 1 3 212       |
| Delagoa Bay,            | 10 kgs. 10       |
| Shanghai,               | 21 t. 7 3 48     |
| Halifax,                | 5 6              |
| Rotterdam,              | 7 11 2 150       |
| Stettin,                | 1 1 21           |
| Danzig,                 | 11 1 1 206       |
| <b>Calcium</b>          |                  |
| Adelaide,               | 5 t. 4 c. £12    |
| <b>Calcium Chloride</b> |                  |
| Melbourne,              | 10 t. 10 c. £24  |
| <b>Carbolic Acid</b>    |                  |
| Penang,                 | 1 t. 7 c. £16    |
| Tampico,                | 1 4              |
| Calcutta,               | 3 10             |
| Yokohama,               | 7 10 1,050       |
| Santander,              | 19 3 q. 55       |
| Rotterdam,              | 37 9 1 949       |
| New York,               | 52 2 1 683       |
| Hamburg,                | 1 1 2 64         |
| <b>Castor Oil</b>       |                  |
| Accra,                  | 10 cs.           |
| Callao,                 | 10               |
| <b>Caustic Potash</b>   |                  |
| Boston,                 | 5 t. 16 c. £142  |
| Portland M.,            | 4 12             |
| <b>Caustic Soda</b>     |                  |
| Alexandria,             | 10 dms. 20 kgs.  |
| Adelaide,               | 35               |
| Algoa Bay,              | 6                |
| Alicante,               | 55               |
| Antwerp,                | 15               |
| Amsterdam,              | 67               |
| Bahia,                  | 40               |
| Baltimore,              | 200              |
| Barceloneta,            | 260 20 brls.     |
| Bilbao,                 | 203              |
| Beyrout,                | 34               |
| Bombay,                 | 10               |
| Boston,                 | 25 50            |
| Carapano,               | 12               |
| Catania,                | 35               |
| Dunedin,                | 37               |
| Dunkirk,                | 35               |
| Genoa,                  | 135              |
| Hamburg,                | 125              |
| Hiogo,                  | 150              |
| Leghorn,                | 75               |
| Madeira,                | 20               |
| Malaga,                 | 276 26           |
| Marseilles,             | 69               |
| Melbourne,              | 103              |
| Messina,                | 74               |







|                       |                |
|-----------------------|----------------|
| <b>Turpentine—</b>    |                |
| Copenhagen,           | 8 brls.        |
| Sierra Leone,         | 10 dms.        |
| Valparaiso,           | 20 bks.        |
| Alexandria,           | 14             |
| <b>Varnish—</b>       |                |
| Barcelona,            | 3 cs.          |
| Batavia,              | 2              |
| Callao,               | 2              |
| Genoa,                | 4 cks.         |
| Paris,                | 3              |
| <b>Verdigris—</b>     |                |
| Hioho,                | 6 c. 1 q. £12  |
| <b>Whiting—</b>       |                |
| Liquine,              | 50 brls.       |
| <b>Zinc Chloride—</b> |                |
| Bombay,               | 2 t. 18 c. £35 |

# **MANCHESTER.**

*Week ending February 5th.*

|                                          |                    |
|------------------------------------------|--------------------|
| <b>Aniline Colours—</b>                  |                    |
| Rotterdam,                               | 3 pks.             |
| <b>Aniline Oil—</b>                      |                    |
| Hamburg,                                 | 1 dm.              |
| Antwerp,                                 | 10                 |
| <b>Chemicals (otherwise undescribed)</b> |                    |
| Alexandria,                              | 20 brls.           |
| Barcelona,                               | 14 brls. 1 cs.     |
| Bombay,                                  | 23 cks.            |
| Rotterdam,                               | 6                  |
| <b>Coal Products (otherwise undes.)—</b> |                    |
| Barcelona,                               | 2 dms.             |
| Hamburg,                                 | 9 cks.             |
| Trepert,                                 | 40 5 cs. 169 brls. |
| Antwerp,                                 | 61 6 pks.          |
| Rotterdam,                               | 69 24 brls.        |
| <b>Coal Tar Dyes—</b>                    |                    |
| Barcelona,                               | 1 cs.              |
| Hamburg,                                 | 5 kgs.             |
| Rotterdam,                               | 4 cks. 2 dms.      |
| <b>Manure—</b>                           |                    |
| Valencia,                                | 2,072 bgs.         |
| <b>Paraffin Wax—</b>                     |                    |
| Barcelona,                               | 10 bgs.            |
| <b>Pitch—</b>                            |                    |
| Antwerp,                                 | 11,687 c. 2 pcls.  |
| <b>Salt—</b>                             |                    |
| Rotterdam,                               | 200 t.             |
| <b>Tar Oil—</b>                          |                    |
| Hamburg,                                 | 20 dms.            |
| Antwerp,                                 | 10                 |
| Rotterdam,                               | 45                 |
| <b>Tar Salts—</b>                        |                    |
| Rotterdam,                               | 23 cks.            |

# **HULL.**

*Week ending February 1st.*

|                                      |                |
|--------------------------------------|----------------|
| <b>Alkali—</b>                       |                |
| Bremen,                              | 120 bgs.       |
| <b>Ammonium Sulphate—</b>            |                |
| Antwerp,                             | 200 bgs.       |
| Dunkirk,                             | 404            |
| Hamburg,                             | 999            |
| New York,                            | 482            |
| Rotterdam,                           | 1,000          |
| Ghent,                               | 990            |
| <b>Benzol—</b>                       |                |
| Amsterdam,                           | 10 dms.        |
| Rotterdam,                           | 24 cks.        |
| <b>Bleaching Powder—</b>             |                |
| Liban,                               | 14 cks.        |
| New York,                            | 31             |
| <b>Chemicals (otherwise undes.)—</b> |                |
| Amsterdam,                           | 40 cks.        |
| Antwerp,                             | 39 cs.         |
| Christiania,                         | 18 2,596 slbs. |
| Constantinople,                      | 50 21 pks      |
| Copenhagen,                          | 5              |
| Danzig,                              | 4              |
| Gothenburg,                          | 1 10           |
| Hango,                               | 3              |
| Hamburg,                             | 1              |
| Liban,                               | 6 77           |
| Odessa,                              | 1              |
| Reval,                               | 4 13           |
| St. Petersburg,                      | 151 50         |
| <b>Alizarin—</b>                     |                |
| Reval,                               | 1 4            |
| <b>Alumina—</b>                      |                |
| Reval,                               | 22 c.          |
| <b>Aniline Dyes</b>                  |                |
| Melbourne,                           | 1 cs.          |
| <b>Aniline Oil</b>                   |                |
| Ghent,                               | 5 cks.         |
| <b>Coal Tar Dyes</b>                 |                |
| Yokohama,                            | 20 cs.         |

|                                          |                |
|------------------------------------------|----------------|
| <b>Dyestuffs (otherwise undescribed)</b> |                |
| Hamburg,                                 | 5 cks.         |
| Liban,                                   | 2 pks.         |
| Stettin,                                 | 60 bgs.        |
| <b>Linseed Oil—</b>                      |                |
| Amsterdam,                               | 50 c.          |
| Christiania,                             | 240            |
| Copenhagen,                              | 18             |
| Christiansand,                           | 34             |
| Drontheim,                               | 50             |
| Rotterdam,                               | 202            |
| Stavanger,                               | 42             |
| <b>Ochre—</b>                            |                |
| Hamburg,                                 | 26 cks.        |
| <b>Painters' Colours—</b>                |                |
| Amsterdam,                               | 35 cks. 3 pks. |
| Antwerp,                                 | 32 4 cs. 23    |
| Bergen,                                  | 1              |
| Bordeaux,                                | 2              |
| Christiania,                             | 6 6 dms. 1     |
| Copenhagen,                              | 9              |
| Dunkirk,                                 | 5 24           |
| Danzig,                                  | 11             |
| Gothenburg,                              | 7              |
| Hamburg,                                 | 5 1 cs.        |
| Konigsberg,                              | 9              |
| Liban,                                   | 2              |
| New York,                                | 51 80          |
| Odessa,                                  | 50             |
| Rotterdam,                               | 3              |
| Stettin,                                 | 10             |
| Ghent,                                   | 12             |
| <b>Pitch—</b>                            |                |
| Antwerp,                                 | 262 t.         |
| Dunkirk,                                 | 220            |
| <b>Soap—</b>                             |                |
| Bergen,                                  | 35 cs.         |
| Ghent,                                   | 36             |
| Hamburg,                                 | 3              |
| <b>Soda Salts—</b>                       |                |
| Stettin,                                 | 100 bgs.       |
| <b>Tallow—</b>                           |                |
| Amsterdam,                               | 50 cks.        |
| <b>Tar—</b>                              |                |
| Bremen,                                  | 1 ck.          |
| <b>Varnish—</b>                          |                |
| Amsterdam,                               | 1 ck. 4 cs.    |
| Antwerp,                                 | 1              |
| Bordeaux,                                | 2 brls.        |
| Danzig,                                  | 1              |
| Gothenburg,                              | 2 dms.         |
| Hamburg,                                 | 2 2            |

# **GLASGOW.**

*Week ending February 6th.*

|                                          |              |
|------------------------------------------|--------------|
| <b>Albumen—</b>                          |              |
| U.S.A.,                                  | £37          |
| <b>Ammonia—</b>                          |              |
| St. Croix,                               | 5 c.         |
| <b>Ammonium Chloride—</b>                |              |
| Spain,                                   | 5 t. 16½ c.  |
| <b>Ammonium Sulphate—</b>                |              |
| Cullera,                                 | 344 t. 16 c. |
| Gandia,                                  | 39 15½       |
| Valencia,                                | 40 1½        |
| Barbadoes,                               | 72 5         |
| Charente,                                | 153 9¼       |
| Demerara,                                | 305 5        |
| Bruges,                                  | 370 10       |
| <b>Boracic Acid—</b>                     |              |
| Hioho,                                   | £30          |
| <b>Cod Oil—</b>                          |              |
| Antwerp,                                 | £27          |
| <b>Coal Products—</b>                    |              |
| Greosote                                 |              |
| France,                                  | 216 t. 19 c. |
| <b>Naphtha</b>                           |              |
| France,                                  | £38          |
| <b>Pitch</b>                             |              |
| Bombay,                                  | £121         |
| Amsterdam,                               | 250 t.       |
| Batavia,                                 | 1 2 c.       |
| Rotterdam,                               | 18           |
| Ancona,                                  | 716          |
| <b>Tar</b>                               |              |
| Bombay,                                  | £269         |
| Batavia,                                 | 1 t. 3 c.    |
| Hamburg,                                 | 12 brls.     |
| <b>Coal Products (otherwise undes.)—</b> |              |
| Rotterdam,                               | 14 t.        |
| <b>Copperas—</b>                         |              |
| Bombay,                                  | £119         |
| <b>Extracts—</b>                         |              |
| Barcelona,                               | £39          |
| U.S.A.,                                  | 45           |
| <b>Farina—</b>                           |              |
| Oporto,                                  | £44          |
| U.S.A.,                                  | 31           |

|                              |             |
|------------------------------|-------------|
| <b>Gelatine—</b>             |             |
| U.S.A.,                      | £726        |
| <b>Linseed Oil—</b>          |             |
| Singapore,                   | 3 t. 1½ c.  |
| Lucknow,                     | 1 8½        |
| <b>Litharge—</b>             |             |
| Amsterdam,                   | £17         |
| <b>Manure—</b>               |             |
| Demerara,                    | 20 t.       |
| <b>Paint—</b>                |             |
| Bombay,                      | £96         |
| B. Ayres,                    | 82          |
| Paraguay,                    | 10          |
| Shanghai,                    | 57          |
| Singapore,                   | 132         |
| <b>Painters' Colours—</b>    |             |
| Antwerp,                     | £87         |
| Demerara,                    | 63          |
| Yokohama,                    | 60          |
| Calcutta,                    | 225         |
| Malta,                       | 66          |
| U.S.A.,                      | 166         |
| <b>Paraffin Wax—</b>         |             |
| Bordeaux,                    | £50         |
| Valencia,                    | 70          |
| Arendal,                     | £32. 10s.   |
| <b>Potassium Bichromate—</b> |             |
| Oporto,                      | £196        |
| Antwerp,                     | 200         |
| Yokohama,                    | 193         |
| Amsterdam,                   | 198         |
| Rotterdam,                   | 20          |
| Hioho,                       | 1,141       |
| Rouen,                       | 754         |
| Venice,                      | 234         |
| <b>Potassium Prussiate—</b>  |             |
| Barcelona,                   | 3 t.        |
| Hioho,                       | 11 c.       |
| Yokohama,                    | 1 1         |
| <b>Rosin Oil—</b>            |             |
| Amsterdam,                   | £50         |
| <b>Salt—</b>                 |             |
| Bangkok,                     | 2 t. 3 c.   |
| <b>Sheep Dip—</b>            |             |
| B. Ayres,                    | £31         |
| <b>Sodium Bichromate—</b>    |             |
| Rouen,                       | 11 t. 15 c. |
| <b>Sodium Iodide—</b>        |             |
| Rotterdam,                   | £450        |
| <b>Sulphur—</b>              |             |
| Demerara,                    | £45         |
| <b>Superphosphates—</b>      |             |
| Gandia,                      | 49 t. 4¼ c. |
| <b>Tallow—</b>               |             |
| Rotterdam,                   | 1 t. 16 c.  |
| <b>Treacle—</b>              |             |
| Christiania,                 | 18 t. ½ c.  |
| Rotterdam,                   | 3 6         |
| <b>White Lead—</b>           |             |
| Johannesburg,                | £72         |

# **TYNE.**

*Week ending February 1st.*

|                           |             |
|---------------------------|-------------|
| <b>Alkali—</b>            |             |
| Amsterdam,                | 38 t. 3 c.  |
| Rotterdam,                | 7 13        |
| <b>Ammonium Sulphate—</b> |             |
| Genoa,                    | 30 t.       |
| <b>Anthracene—</b>        |             |
| Rotterdam,                | 40 t. 9 c.  |
| <b>Antimony—</b>          |             |
| New York,                 | 15 t.       |
| <b>Barium Binoxide—</b>   |             |
| Rouen,                    | 14 t. 19 c. |
| New York,                 | 10          |
| <b>Bleaching Powder—</b>  |             |
| Antwerp,                  | 30 t. 17 c. |
| Hamburg,                  | 5 11        |
| Amsterdam,                | 23 12       |
| Rotterdam,                | 20 3        |
| New York,                 | 50 2        |
| Copenhagen,               | 70 19       |
| Drontheim,                | 7 13        |
| Gothenburg,               | 9 19        |
| Lisbon,                   | 10          |
| Christiania,              | 16 12       |
| <b>Calcined Magnesia—</b> |             |
| Genoa,                    | 2 t. 10 c.  |
| <b>Caustic Soda—</b>      |             |
| Antwerp,                  | 10 t.       |
| Hamburg,                  | 1 4 c.      |
| Amsterdam,                | 9 7         |
| New York,                 | 92 17       |
| Christiania,              | 4 18        |
| Arendal,                  | 2 18        |
| Drammen,                  | 5 16        |

|                             |              |
|-----------------------------|--------------|
| <b>Citric Acid—</b>         |              |
| St. Petersburg,             | 1 t.         |
| <b>Colours—</b>             |              |
| Antwerp,                    | 14 c.        |
| <b>Fluor Spar—</b>          |              |
| New York,                   | 45 t.        |
| <b>Glue—</b>                |              |
| Gothenburg,                 | 10 c.        |
| <b>Litharge—</b>            |              |
| Antwerp,                    | 12 c.        |
| <b>Magnesia—</b>            |              |
| Antwerp,                    | 1 c.         |
| Hamburg,                    | 10           |
| <b>Manure—</b>              |              |
| Valencia,                   | 238 t. 10 c. |
| <b>Paint—</b>               |              |
| Ergasteria,                 | 3 c.         |
| Hamburg,                    | 1 t. 10      |
| <b>Painters' Colours—</b>   |              |
| Ergasteria,                 | 6 c.         |
| <b>Phosphorus—</b>          |              |
| Valencia,                   | 5 t. 3 c.    |
| <b>Potassium Chlorate—</b>  |              |
| St. Petersburg,             | 10 t. 27 c.  |
| <b>Rosin Oil—</b>           |              |
| Rotterdam,                  | 1 t. 1 c.    |
| <b>Slag—</b>                |              |
| Rotterdam,                  | 200 t.       |
| <b>Soda—</b>                |              |
| Antwerp,                    | 10 t. 3 c.   |
| Rotterdam,                  | 17 3         |
| New York,                   | 100 2        |
| Christiania,                | 100          |
| Laurvig,                    | 5            |
| <b>Soda Ash—</b>            |              |
| Gothenburg,                 | 23 t. 8 c.   |
| Odessa,                     | 10 6         |
| <b>Sodium Hyposulphate—</b> |              |
| New York,                   | 40 t. 9 c.   |
| <b>Sodium Sulphate—</b>     |              |
| Drammen,                    | 50 t.        |
| <b>Sulphur—</b>             |              |
| Gothenburg,                 | 5 t.         |
| Drammen,                    | 325          |
| <b>Tallow—</b>              |              |
| Genoa,                      | 8 t. 9 c.    |
| <b>White Lead—</b>          |              |
| Odessa,                     | 15 t. 3 c.   |

# **GOOLE.**

*Week ending January 29th.*

|                                          |              |
|------------------------------------------|--------------|
| <b>Benzol—</b>                           |              |
| Boulogne,                                | 121 cks.     |
| Rotterdam,                               | 73 11 dms.   |
| <b>Chemicals (otherwise undescribed)</b> |              |
| Ghent,                                   | 4 cks.       |
| <b>Coal Products (otherwise undes.)—</b> |              |
| Boulogne,                                | 50 cks.      |
| Ghent,                                   | 4            |
| Rotterdam,                               | 14 9 cs.     |
| <b>Colours—</b>                          |              |
| Boulogne,                                | 2 cks. 1 cs. |
| Ghent,                                   | 3 pks.       |
| <b>Dyestuffs (otherwise undescribed)</b> |              |
| Ghent,                                   | 1 ck.        |
| <b>Manure—</b>                           |              |
| Bruges,                                  | 252 bgs.     |
| Ghent,                                   | 957          |
| <b>Pitch—</b>                            |              |
| Antwerp,                                 | 262 t.       |

# **GRIMSBY.**

*Week ending February 1st.*

|                                          |               |
|------------------------------------------|---------------|
| <b>Chemicals (otherwise undescribed)</b> |               |
| Dieppe,                                  | 1 ck. 1 cs.   |
| Malmö,                                   | 10 kgs.       |
| <b>Coal Products (otherwise undes.)—</b> |               |
| Dieppe,                                  | 95 cks. 2 cs. |
| Hamburg,                                 | 23 20 pks.    |
| Rotterdam,                               | 25            |
| <b>Colours—</b>                          |               |
| Antwerp,                                 | 4 cks.        |
| Hamburg,                                 | 2             |
| Rotterdam,                               | 1 3 pks.      |
| <b>Varnish—</b>                          |               |
| Dieppe,                                  | 10 cks. 2 cs. |



## PRICES CURRENT.

WEDNESDAY, FEB. 12TH, 1896.

PREPARED BY MESSRS. HIGGINBOTTOM AND CO., 116, PORTLAND STREET, MANCHESTER.

The values stated are F.O.R. at maker's works, or at usual ports of shipment in U.K. The price in different localities may vary.

| Acids:—                                                  |                   | £            | s. | d.   |
|----------------------------------------------------------|-------------------|--------------|----|------|
| Acetic, 25% and 40% .. .. .                              | per cwt.          | 6/           | &  | 9/-  |
| Glacial .. .. .                                          | "                 | 40/-         |    |      |
| Arsenic S.G., 2000° .. .. .                              | "                 | 0            | 17 | 6    |
| Fluoric .. .. .                                          | per lb.           | 0            | 0  | 3½   |
| Muriatic (Tower Salts), 30° Tw. .. .. .                  | per bottle        | 0            | 0  | 10   |
| " (Cylinder), 30° Tw. .. .. .                            | "                 | 0            | 3  | 0    |
| Nitric 80° Tw. .. .. .                                   | per lb.           | 0            | 0  | 1½   |
| Nitrous .. .. .                                          | "                 | 0            | 0  | 1½   |
| Oxalic .. .. .                                           | nett              | 0            | 0  | 3½   |
| Phosphoric, 1750° .. .. .                                | "                 | 0            | 1  | 0    |
| Picric .. .. .                                           | "                 | 0            | 0  | 11   |
| Sulphuric (fuming 50%) .. .. .                           | per ton           | 15           | 10 | 0    |
| " (monohydrate) .. .. .                                  | "                 | 5            | 10 | 0    |
| " (Pyrites, 168°) .. .. .                                | "                 | 3            | 0  | 0    |
| " 150° .. .. .                                           | "                 | 1            | 5  | 0    |
| " (free from arsenic, 145°) .. .. .                      | "                 | 1            | 7  | 6    |
| Sulphurous (solution) S.G. 1025 .. .. .                  | "                 | 3            | 0  | 0    |
| Tannic (pure) .. .. .                                    | per lb.           | 0            | 1  | 0    |
| Tartaric .. .. .                                         | "                 | 0            | 1  | 2½   |
| Arsenic, white powdered .. .. .                          | nett per ton      | 18           | 0  | 0    |
| Alum (loose lump) .. .. .                                | "                 | 4            | 12 | 6    |
| Alumina Sulphate (pure) .. .. .                          | "                 | 4            | 12 | 6    |
| Aluminoferic .. .. .                                     | "                 | 2            | 7  | 6    |
| Aluminium .. .. .                                        | per lb.           | 0            | 2  | 10   |
| Ammonia, Anhydrous .. .. .                               | "                 | 0            | 1  | 3    |
| " 880=28° B. .. .. .                                     | per lb.           | 0            | 0  | 3    |
| " =24° B. .. .. .                                        | "                 | 0            | 0  | 2½   |
| " Carbonate .. .. .                                      | nett              | 0            | 0  | 3½   |
| " Muriate .. .. .                                        | per ton           | 22           | 15 | 0    |
| " (sal-ammoniac) 1st & 2nd .. .. .                       | per cwt.          | 39/-         | &  | 37/- |
| " Nitrate .. .. .                                        | per ton           | 37           | 10 | 0    |
| " Phosphate .. .. .                                      | per lb.           | 0            | 0  | 6½   |
| " Sulphate (grey) London .. .. .                         | per ton           | 8            | 12 | 6    |
| " (grey) Hull .. .. .                                    | "                 | 8            | 10 | 0    |
| Aniline Oil (pure) .. .. .                               | per lb.           | 0            | 0  | 8½   |
| Aniline Salt .. .. .                                     | "                 | 0            | 0  | 7½   |
| Antimony .. .. .                                         | per ton           | 29           | 15 | 0    |
| " (tartar emetic) .. .. .                                | per lb.           | 0            | 0  | 7½   |
| " (golden sulphide) .. .. .                              | "                 | 0            | 0  | 10   |
| Barium Chloride .. .. .                                  | per ton           | 6            | 7  | 6    |
| " Carbonate (native) .. .. .                             | "                 | 3            | 10 | 0    |
| " Sulphate (native levigated) .. .. .                    | "                 | 42,6 to 65/- |    |      |
| Bleaching Powder, 35% .. .. .                            | nett              | 7            | 0  | 0    |
| " Liquor, 7% .. .. .                                     | "                 | 3            | 10 | 0    |
| Bisulphide of Carbon .. .. .                             | "                 | 12           | 10 | 0    |
| Chromium Acetate (crystal) .. .. .                       | per lb.           | 0            | 0  | 6    |
| Calcium Chloride .. .. .                                 | per ton           | 2            | 2  | 6    |
| China Clay (at Runcorn) in bulk .. .. .                  | "                 | 15/-         | to | 30/- |
| <b>Coal Tar Products and Dyes:—</b>                      |                   |              |    |      |
| Alizarine (artificial) 20% .. .. .                       | nett per lb.      | 0            | 0  | 7¾   |
| Magenta .. .. .                                          | "                 | 0            | 3  | 9    |
| Anthracene, 30% A, f.o.b. London .. .. .                 | per unit per cwt. | 0            | 0  | 11½  |
| Benzol, 90% .. .. .                                      | per gallon        | 0            | 2  | 1    |
| " 50/90 .. .. .                                          | "                 | 0            | 1  | 8½   |
| Carbolic Acid (crystallised 40°) .. .. .                 | per lb.           | 0            | 0  | 8    |
| " (crude 60°) .. .. .                                    | per gallon        | 0            | 2  | 0    |
| Creosote (ordinary) .. .. .                              | "                 | 0            | 0  | 1½   |
| " (filtered for Lucigen light) .. .. .                   | "                 | 0            | 0  | 2    |
| Crude Naphtha 30% @ 120° C. .. .. .                      | "                 | 0            | 0  | 10   |
| Grease Oils, 22° Tw. .. .. .                             | per ton           | 2            | 10 | 0    |
| Pitch, f.o.b. Liverpool or Garston .. .. .               | "                 | 1            | 13 | 0    |
| Solvent Naphtha, 90% at 160° .. .. .                     | per gallon        | 0            | 1  | 6    |
| " Lucigen" and "Wells" Oils .. .. .                      | "                 | 0            | 0  | 2½   |
| Copper .. .. .                                           | per ton           | 43           | 15 | 0    |
| " Sulphate .. .. .                                       | "                 | 16           | 10 | 0    |
| " Oxide (copper scales) .. .. .                          | "                 | 41           | 10 | 0    |
| Glycerine (crude) .. .. .                                | "                 | 37           | 10 | 0    |
| " (distilled S.G. 1250°) .. .. .                         | "                 | 75           | 0  | 0    |
| Iodine .. .. .                                           | nett, per oz.     | 0            | 0  | 7½   |
| Iron Sulphate (copperas) .. .. .                         | per ton           | 1            | 5  | 0    |
| " Sulphide (antimony slag) .. .. .                       | "                 | 2            | 0  | 0    |
| Lead (sheet) for cash .. .. .                            | "                 | 12           | 7  | 6    |
| " Litharge Flake (ex ship) .. .. .                       | "                 | 14           | 0  | 0    |
| " Acetate (white) .. .. .                                | "                 | 21           | 10 | 0    |
| " brown .. .. .                                          | "                 | 16           | 0  | 0    |
| " Carbonate (white lead) pure .. .. .                    | "                 | 16           | 0  | 0    |
| " Nitrate .. .. .                                        | "                 | 19           | 0  | 0    |
| Lime, Acetate (brown) (ex ship) .. .. .                  | per ton           | 4            | 17 | 6    |
| " (grey) (ex ship) .. .. .                               | "                 | 7            | 10 | 0    |
| Magnesium (ribbon and wire) .. .. .                      | per oz.           | 0            | 2  | 3    |
| " Chloride (ex ship) .. .. .                             | per ton           | 2            | 7  | 6    |
| " Carbonate .. .. .                                      | per cwt.          | 1            | 17 | 6    |
| " Hydrate .. .. .                                        | per ton           | 17           | 0  | 0    |
| " Sulphate (Epsom Salts) .. .. .                         | per ton           | 2            | 15 | 0    |
| Manganese, Sulphate .. .. .                              | "                 | 16           | 10 | 0    |
| " Borate .. .. .                                         | per cwt.          | 2            | 15 | 0    |
| " Ore, 70% .. .. .                                       | per ton           | 3            | 10 | 0    |
| Methylated Spirit, 61° O.P. .. .. .                      | per gallon        | 0            | 1  | 9    |
| Naphtha (Wood), Solvent .. .. .                          | "                 | 0            | 3  | 0    |
| " Miscible, 60° O.P. .. .. .                             | "                 | 0            | 3  | 6    |
| <b>Oils:—</b>                                            |                   |              |    |      |
| Cotton-seed .. .. .                                      | per ton           | 17           | 10 | 0    |
| Linseed .. .. .                                          | "                 | 20           | 15 | 0    |
| Petroleum, American .. .. .                              | per gallon        | 0            | 0  | 7    |
| Stearine .. .. .                                         | per ton           | 24           | 0  | 0    |
| Phosphorus (yellow) .. .. .                              | per lb.           | 0            | 2  | 2    |
| " (red) .. .. .                                          | "                 | 0            | 2  | 8    |
| Potassium (metal) .. .. .                                | per oz.           | 0            | 3  | 7    |
| " Bichromate .. .. .                                     | nett per lb.      | 0            | 0  | 4½   |
| " Carbonate, 90% (ex ship) .. .. .                       | per ton           | 17           | 5  | 0    |
| " Chlorate .. .. .                                       | per lb.           | 0            | 0  | 5    |
| " Cyanide, 98% .. .. .                                   | "                 | 0            | 1  | 3    |
| " Hydrate (Caustic Potash) 90% .. .. .                   | per ton           | 24           | 10 | 0    |
| " (Caustic Potash) 75/80% .. .. .                        | "                 | 21           | 0  | 0    |
| " (Caustic Potash) 70/75% .. .. .                        | "                 | 20           | 0  | 0    |
| " Nitrate (refined) .. .. .                              | per cwt.          | 1            | 1  | 6    |
| " Permanganate .. .. .                                   | per cwt.          | 3            | 7  | 6    |
| " Prussiate Yellow .. .. .                               | per lb.           | 0            | 0  | 7½   |
| " Sulphate, 90% (ex ship) .. .. .                        | per ton           | 9            | 15 | 0    |
| " Muriate, 80% (do.) .. .. .                             | "                 | 8            | 10 | 0    |
| Silver (metal) .. .. .                                   | per oz.           | 0            | 2  | 6½   |
| " Nitrate .. .. .                                        | "                 | 0            | 2  | 0    |
| Sodium (metal) .. .. .                                   | per lb.           | 0            | 2  | 11   |
| " Carb. (refined Soda-ash) 48% .. .. .                   | nett per ton      | 4            | 15 | 0    |
| " (Caustic Soda-ash) 48% .. .. .                         | "                 | 4            | 5  | 0    |
| " (Carb. Soda-ash) 48% .. .. .                           | "                 | 4            | 0  | 0    |
| " (Alkali) 58% .. .. .                                   | "                 | 3            | 15 | 0    |
| " (Soda Crystals) .. .. .                                | "                 | 2            | 2  | 6    |
| " Acetate (ex-ship) .. .. .                              | "                 | 14           | 10 | 0    |
| " Arseniate, 45% .. .. .                                 | "                 | 12           | 0  | 0    |
| " Chlorate .. .. .                                       | per lb.           | 0            | 0  | 6½   |
| " Borate (Borax) .. .. .                                 | nett, per ton     | 19           | 0  | 0    |
| " Bichromate .. .. .                                     | per lb.           | 0            | 0  | 3½   |
| " Hydrate (77% Caustic Soda)(f.o.b.) net pr. ton .. .. . | "                 | 9            | 10 | 0    |
| " (74% Caustic Soda) .. .. .                             | "                 | 8            | 12 | 6    |
| " (70% Caustic Soda) .. .. .                             | "                 | 7            | 12 | 6    |
| " (60% Caustic Soda) .. .. .                             | "                 | 6            | 12 | 6    |
| " (60% Caustic Soda, cream) (f.o.b.) .. .. .             | "                 | 6            | 10 | 0    |
| " Bicarbonate .. .. .                                    | "                 | 6            | 10 | 0    |
| " Hyposulphite .. .. .                                   | "                 | 6            | 10 | 0    |
| " Manganate, 30% .. .. .                                 | "                 | 16           | 0  | 0    |
| " Nitrate (95%) ex-ship Liverpool .. .. .                | per cwt.          | 0            | 7  | 1    |
| " Nitrite, 98% .. .. .                                   | per ton           | 30           | 0  | 0    |
| " Phosphate .. .. .                                      | "                 | 13           | 5  | 0    |
| " Silicate (glass) .. .. .                               | per ton           | 4            | 10 | 0    |
| " (liquid, 100° Tw.) .. .. .                             | "                 | 3            | 10 | 0    |
| " Stannate, 40% .. .. .                                  | per cwt.          | 3            | 2  | 0    |
| " Sulphate (Salt-cake) .. .. .                           | per ton           | 1            | 7  | 0    |
| " (Glauber's Salts) .. .. .                              | "                 | 1            | 10 | 0    |
| " Sulphide .. .. .                                       | "                 | 7            | 15 | 0    |
| " Sulphite .. .. .                                       | "                 | 5            | 5  | 0    |
| Strontium Hydrate, 100% .. .. .                          | "                 | 8            | 10 | 0    |
| Sulphocyanide Ammonium, 95% .. .. .                      | per lb.           | 0            | 0  | 0    |
| " Barium, 95% .. .. .                                    | "                 | 0            | 0  | 0    |
| " Potassium .. .. .                                      | "                 | 0            | 0  | 0    |
| Sulphur (Flowers) .. .. .                                | per ton           | 6            | 15 | 0    |
| " (Roll Brimstone) .. .. .                               | "                 | 5            | 0  | 0    |
| " Brimstone: Best Quality .. .. .                        | "                 | 3            | 12 | 0    |
| Superphosphate of Lime (26%) .. .. .                     | "                 | 2            | 7  | 0    |
| Tallow .. .. .                                           | "                 | 22           | 10 | 0    |
| Tin Crystals .. .. .                                     | per lb.           | 0            | 0  | 0    |
| " English Ingots .. .. .                                 | per ton           | 64           | 10 | 0    |
| Zinc (Spelter) .. .. .                                   | "                 | 15           | 2  | 0    |
| " Chloride (solution, 100° Tw.) .. .. .                  | "                 | 5            | 5  | 0    |



# THE CHEMICAL TRADE JOURNAL

AND  
OIL, PAINT and COLOUR REVIEW.

Publishing Offices: 32, BLACKFRIARS STREET, MANCHESTER.

No. 457.

SATURDAY, FEBRUARY 22, 1896.

Vol. XVIII.

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## LATE ADVERTISEMENTS.

### TENDER.

**WANTED** Tenders for Manufacture of Bromide of Cyanogen (BrCy) for Gold Extraction.  
Particulars as to manufacture can be obtained from Mr. H. PICKARD, 37, Wharfedale, City-road, London N.  
Gold Ore Treatment Company, Ltd.  
60, Gracechurch-street, E.C.

**WANTED** a steady and experienced Tar Distiller.  
—Apply LEVINSTEIN, LTD., Crumpsall Vale Chemical Works, Blackley.

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SEE INSIDE.**

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**DAVIS BROS., 32, Blackfriars Street, MANCHESTER.**

Our Registered Telegraphic Address is—

**"Expert, Manchester."**

**NATIONAL TELEPHONE 3060.**

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## CURRENT TOPICS.

### PAINT-EATING HEIFERS.

IT appears that cows are capable of many things besides chewing cud and yielding milk. We know that in the States they make novel advertisement hoardings or sandwich boards, according to whether they are adorned with announcements about soap and pills on one side or both, and now, according to the Crewe County Court Judge, they are prone to browse on paint, by way of a change of diet.

Some paint was left in a cart shed, and to all accounts was partaken of by two heifers, for a farm labourer stated that he had driven them away from the pots, which had been overturned. The repast seemingly did not agree with them, and they were examined by a veterinary, who pronounced them to be suffering from lead poisoning. Eventually they died, and on the owner bringing an action against the painter he obtained £12. damages.

The evidence was on the whole dead against the possibility of the heifers eating the paint, the veterinary himself admitting that during his twenty years' experience he had never actually known cattle eat paint, though he had read of cases. His admission shows that this gentleman was much more careful and considerate in laying his charge against the paint than his brother "vet.," who, as stated elsewhere in this issue, attributes the death of sheep to blood poisoning contracted by eating turnip shells, grown with bone manure, presumably made from diseased bones. *Prima facie* the paint case is far more probable.

We do not know how the Crewe County Court Judge would have decided in the manure case, but he evidently was convinced that this heifer case was the exception that proves the rule, and gave judgment accordingly. The fact should be noted by the trade, as, although the defendant stated that he had never in a long experience in the paint trade found it worth while to protect his paint pots from cattle, it will be worth while doing so in future, since, be custom and experience what they may, the law has created a precedent contrary to both, and the law is the law.

### THE POSITION OF COPPER.

Amongst the articles that have been fortunate enough to show that they are improving with trade, copper has, both in its statistical position and price, evinced promising possibilities. There is plenty of room for improvement, and this metal seems to have set about the task in real earnest.

The change for the better is mainly due to the heavy deliveries during the early part of January, and the absence of supplies on the usual scale to compensate the depletion of the stocks.

During the last two weeks the deliveries have also been about 2,200 tons in excess of the arrivals.

In consequence the visible stock, which at the beginning of February stood at 46,128 tons, has been reduced to 43,916



tons, which is the lowest total that has been reached under any circumstances during the last three years.

Though the statistical position is, therefore, the best that has been experienced since 1893, the same cannot be said as regards prices, for although there has been an advance of £2, or rather better during the last fortnight, prices are still considerably below the level reached in August, when the market was active. At present the demand is keeping steady, so that, if anything, the chances are in favour of prices ranging higher, and so approximating more closely the £47 reached last autumn.

#### THE FRENCH PHOSPHATE COMBINE.

The combination of the Somme producers is making headway, and at a meeting held last week at Péronne delegates were appointed to form a representative committee. The Combine is practically composed of three parties, comprised largely of those who were members of the old Lagache Syndicate, still more largely of those who deal through MM. Hébré and Girault, and, lastly, of the minority who have not been associated with any combination heretofore. The committee has been made up of four delegates representing each section, making twelve members in all, who will meet at Amiens to ascertain the production of each works, and so regulate the same as to keep the total production in touch with the demand. As soon as this has been done the Combine will be consolidated. It is uncertain as yet whether all the business will be done through one house, but such an arrangement is improbable, it being far more likely that each section will have its own broking house, though the three sales departments will work in concert with each other.

The step is more or less justified by the results of the Florida Combine, but it remains to be seen how far the Algerian producers interfere with its working, although their law only enables them to operate against the exercise of the Combine in Algeria.

#### TRADE CATALOGUES AND THE PATENT OFFICE.

THE following correspondence with regard to the filing of trade catalogues at the Patent Office has passed between Mr. K. B. Murray, secretary of the London Chamber of Commerce, and Sir H. Reader Lack:—"To Sir Henry Reader Lack, Comptroller-General, Patents, Designs, and Trade Marks Office, 25, Southampton-buildings, Chancery-lane, W.C., 27th January, 1896. Sir,—The attention of this chamber has been called to the fact that the librarian of the Patent Office of the United States of America is making a collection of illustrated and other trade catalogues, price lists, circulars, and other similar publications for reference by those instituting inquiries in regard to patents, designs, and trade marks, or making use of the Patent Office Library. I am desired to say that, in the opinion of this Chamber, such a collection of records in your department would be exceedingly valuable, and am directed to bring the suggestion before the authorities of Her Majesty's Patent Office as one which it would be well to adopt. By this means there would be permanently preserved an enormous amount of extremely useful material which might on occasion elucidate the meaning of many trade terms and usages. If such a collection and filing were adopted by the Patent Office it would, no doubt, be extremely serviceable and be largely resorted to by those interested in patents, designs, and trade marks. I am desired to express the hope that this suggestion will receive the careful consideration of the authorities of her Majesty's Patent Office, and I shall be glad to learn their decision in the matter.—I am, Sir, yours faithfully, KENRIC B. MURRAY, Secretary." To this the following reply was sent:—"25, Southampton-buildings, Chancery-lane, London, W.C., 29th Jan., 1896. Sir,—I beg to acknowledge the receipt of your letter of the 27th instant., suggesting, on behalf of the London Chamber of Commerce, that a collection of illustrated and other trade catalogues, price lists, and similar publications should be made and filed in the Patent Office Library, and, in reply, to inform you that the nucleus of such a collection was formed some 20 years ago, and has since that date been gradually extended. In view, however, of the suggestion of the London Chamber of Commerce, I shall be happy to consider how far it may be possible to render this collection more complete and to make it more accessible for public reference.—I am, Sir, your obedient servant, J. L. READER LACK, Comptroller-general."

## Parliamentary Jottings.

#### PETROLEUM ACCIDENTS.

In the House of Commons on Monday, Mr. Boulnois (Marylebone, E.) asked the Secretary of State for the Home Department whether his attention had been called to the large increase in the number of deaths resulting from accidents caused by the use of dangerous lamps for mineral oil (largely made in Germany); and whether he would consider the advisability of reappointing the Select Committee of 1894, with a view to prevent the sale of such lamps.

Mr. Collings (Birmingham, Bordesley), in the absence of Sir M. W. Ridley, said—The Secretary of State has carefully considered this question, in accordance with the undertaking which he gave when replying to a similar question in August last, and he hopes to be able to secure the re-appointment of the Select Committee.

#### THE CHESHIRE SUBSIDENCE BILL.

The Brine Pumping (Compensation for Subsidence) Bill, suspended under the Standing Order of last session, was passed through all its stages this week.

#### NEW RIVERS POLLUTION BILL.

Among the Bills for which powers have been granted for introduction to the House of Commons, there is a Bill backed by Mr. Wyvill to make more effectual provision for prevention of the pollution of rivers and streams.

## IMPORTS AND EXPORTS FOR JANUARY.

THE Board of Trade returns for the past month are fairly satisfactory. The most notable increases in the imports of interest to the trade have been in rosin, tallow, and india-rubber.

#### IMPORTS OF FOREIGN AND COLONIAL PRODUCE.

| ARTICLES.                   | Quantities.      |            |
|-----------------------------|------------------|------------|
|                             | 1895.            | 1896.      |
| Margarine .....             | Cwt. 91,050      | 81,128     |
| Copper Ore and Regulus..... | Tons. 15,169     | 13,822     |
| Pyrites.....                | " 49,736         | 54,487     |
| Tin .....                   | Cwt. 76,878      | 64,562     |
| Alkali .....                | " 15,532         | 8,977      |
| Brimstone .....             | " 29,990         | 35,857     |
| Dyes, Coal Tar .....        | £. 56,320        | 62,337     |
| Saltpetre .....             | Cwt. 25,590      | 19,564     |
| Petroleum .....             | Gall. 17,349,778 | 17,176,225 |
| Turpentine .....            | Cwt. 28,911      | 69,362     |
| Guano .....                 | Tons. 3,479      | 870        |
| Nitrate of Soda .....       | " 1,882          | 7,864      |
| Paraffin .....              | " 73,274         | 67,783     |
| Rosin .....                 | Cwt. 79,944      | 211,820    |
| Tallow and Stearine.....    | " 128,312        | 206,994    |
| Oil Seed Cake .....         | Tons. 25,733     | 30,527     |
| Wood Pulp.....              | " 23,595         | 21,170     |

#### EXPORTS OF BRITISH AND IRISH MANUFACTURES.

| ARTICLES.               | Quantities.   |           |
|-------------------------|---------------|-----------|
|                         | 1895.         | 1896.     |
| Alkali .....            | Cwt. 500,505  | 469,467   |
| Cement .....            | Tons. 24,593  | 20,612    |
| Coal and Coke .....     | " 2,196,857   | 2,789,938 |
| Copper, all kinds ..... | Cwt. 96,120   | 104,158   |
| Iron and Steel .....    | Tons. 166,711 | 227,607   |
| Chemical Manures .....  | " 27,728      | 29,685    |
| Oils, seed .....        | " 3,663       | 4,007     |
| Salt .....              | " 47,631      | 38,301    |

**PETROLEUM FUEL.**—The German Admiralty is experimenting with the use of petroleum as fuel on board three torpedo boats. The results attained so far are understood to be favourable. The small ironclads *Odin* and *Aegir* are now to be adapted for the new fuel, which will also, it is expected, be introduced in the iron clad *Ersatz Preussen*, now being built.

**COST OF APPARATUS FOR GENERATING X RAYS.**—The *Photogram* says:—"The cost of apparatus has been the chief stumbling block to would-be "shadowgraphers" by the Röntgen rays. A doctor at Edinburgh has just obtained satisfactory results with an outfit which costs—including both the electrical and the photographic apparatus—only just over three pounds.



## The Patent List.

This list is compiled from Official sources in the Manchester Chemical Laboratory, under the immediate supervision of E. E. Davis and Alfred R. Davis, who report professionally the value of Chemical Patents.

**APPLICATIONS FOR ENGLISH LETTERS PATENT.**  
 Drying Cattle Foods and Disinfectants from Waste Products. W. H. Saville. 2,445. February 3.  
 Manufacture of Sodium and Potassium Silicates and of Nitric and Sulphuric Acid. W. Garraway. 2,459. February 4.  
 Extracting and Recovering Oil from Fish and Fish Refuse, etc. J. Jack & M. Blake. 2,511. February 4.  
 Producing Nitrogenous and other Substances. J. S. Wallace and J. Castellans. 2,542. February 4.  
 Tanning. H. L. J. Roy. 2,572. February 4.  
 Polytical Extraction of Caustic Alkali and Hydrochloric Acid from Chloride. A. J. Boulton. 2,594. February 4.  
 Extracts from Apatite and other Mineral Phosphates. J. G. Wiborg. 2,595. February 5.  
 Manufacture of Pigments. H. and S. H. Hawkins. 2,681. February 5.  
 Kilns. H. Simmonds and J. Delaney. 2,943. February 7.  
 Improved Soap. J. Stockhausen. 2,996. February 8.  
 Motor Furnaces for Town's Refuse. S. Willoughby. 2,901. Feb. 8.

### EXTRACTS OF LATEST COMPLETE SPECIFICATIONS.

These abstracts are specially prepared for the Chemical Trade Journal. ALL RIGHTS OF PUBLICATION ARE RESERVED. This is the earliest of abstracts of Chemical and allied patents accessible to the public.

**Improvements in the Manufacture of Chlorine by means of Magnesium Chloride.** T. H. Bell, Middlesbrough (communicated by T. Schloessing, 67, rue d'Orsay, Paris). Eng. Pat. 3,439. February 15th, 1895.

This patent describes apparatus for dehydrating the chloride of magnesium used in patent 11,821, 1887. The chloride is passed through a series of vertical, externally heated, cast iron cylinders fitted with conveyors and filled with HCl gas. To obtain perfect dehydration it is necessary to heat the chloride to a temperature that the acid to attack the cylinders. The final drying is therefore effected in a separate chamber unattacked by the acid at a high temperature.

HCl used is generally that resulting from the partial decomposition of the magnesium chloride grains while drying. This gas contains aqueous vapour, and two methods of removing the same are described: one by scrubbing the gas with vitriol, and the other by passing it through a water-cooler, which condenses the vapour, and when allowed the HCl gas to pass. Means are described for controlling the vitriol used in the scrubbers. Lastly apparatus is described for obtaining the gaseous chlorine from the perfectly dehydrated magnesium chloride. There are in all twelve drawings.

**Improvements in and Relating to the Collection and Analyzing of Gases.** F. G. Waller, Director of the Nederlandsche Gist en Spiritusfabriek, Delft, Holland. Eng. Pat. 1,040. January 16th, 1895.

Two cylinders are connected by a pipe, the second cylinder being one-third the size of the first, and containing a float carrying a piston. On setting the syphon and opening the large cylinder to the atmosphere, a current of gas is gently aspirated, according to the flow of the syphon. For details, the drawing which accompanies the specification must be consulted.

**Improvements in the Production of Zinc Chlorides.** C. Hoepfner, 36, Markfurterstrasse, Giessen. Eng. Pat. 5,662. March 18th, 1895.

In order to convert zinc oxide into the chloride, the former is treated with magnesium chloride or zinc chloride in which the oxide is soluble. The basic solution so obtained is converted into a neutral solution by treating with carbon dioxide. The precipitated zinc carbonate is then converted into chloride according to patent 11,724/94, the magnesium chloride being left for use over again. The solvent chlorides and by-products such as residual liquors from manufacture of zinc chloride, chlorate of potash, and ammonia soda, since an effective method is to treat the zinc oxide with a strong solution of a chloride and CO<sub>2</sub> to form chloride of zinc and calcium carbonate.

**Improvements in the Extraction of Gold and Silver from Ores and Slimes.** J. S. McArthur, 12, Knowl Terrace, Pollokshields, Renfrewshire, J. Yates, 13, West Scotland-street, Kinning Park, Glasgow. Eng. Pat. 2,418. April 2nd, 1895.

This patent is essentially a mechanical one. A vertical shaft carrying amalgamated plates, corrugated to give a large surface, is caused to revolve in a round wooden tank. If preferable the plates can be fixed to a tank revolved. In working, the tank is charged with powdered ore and a solution of cyanide, or other salt that will assist the solution

of the gold, &c. The charge is then stirred by setting the shaft or tank in motion, until all the gold has been caught on the amalgamated plates. There are four drawings.

**Improvements in the Production of Cyanogen Compounds.** E. A. Morgans, Broad-street House, Old Broad-street, London. Eng. Pat. 2,660. Feb. 6th, 1895.

Cyanogen, or compounds such as the chloride and flouride, are produced for treating auriferous ores by decomposing potassium cyanide by electricity, or chemically by means of sulphuric acid and manganese dioxide. To produce the chloride a solution of salt and a decomposable cyanide is electrolysed. Another method is to decompose a mixture of bleaching powder and potassium cyanide with hydrochloric acid, the gases in all cases being used for the treatment of gold and silver ores, either direct or after storage by solution or compression into cylinders.

**Improvements in the Manufacture of Sulphuric Acid.** U. F. Benker, 115, Rue Martre, Clichy, France. Eng. Pat. 1,168. Jan. 17th, 1895.

In the manufacture of vitriol it is frequently found that the Gay-Lussac tower allows yellow gases to escape. Increasing the flow of H<sub>2</sub>SO<sub>4</sub> down the towers, or enlarging the area of the latter, does not overcome this difficulty. The patentee ascribes the loss to the presence of excess of hyponitric acid, which is practically insoluble in sulphuric acid of 60° Bé when carried over by a large volume of gas. It is claimed that by injecting sulphurous acid gas into the last chamber or the last portion of a large chamber situated before the Gay-Lussac tower, the percentage of nitrous acid in the Gay-Lussac acid is materially increased, and the gases leave the tower white, or nearly so. The injector is of special construction, and is explained by three drawings.

**Process for the Manufacture of Carbides or Acetylides of the Earth Metals and Alkali-Earth Metals, and of the Oxides or Salts of these Metals.** L. M. Bullier, 12, Avenue d'Orleans, Paris. Eng. Pat. 2,820. Feb. 8th, 1895.

The object is to produce calcium carbide on a commercial scale for the preparation of acetylene, which is done by heating, say, 56 parts of quicklime and 36 of sugar charcoal or lamp black in a Moissan electric furnace, which gives a carbide having the formula CaC<sub>2</sub>. Where other bases, such as barium or strontium, are used, the hydrate left after decomposing the carbide with water to give acetylene gas, is dissolved in acids such as nitric acid, forming valuable salts.

## EXPORTS OF PETROLEUM FROM U.S.A.

THE Chief of the Bureau of Statistics, Washington, gives the following returns of the exports of petroleum and petroleum products for December, 1895. The total shipments were 80,858,246 gallons, compared with 83,060,220 gallons in 1894. The total for the twelve months ending December, 1895, was 853,126,130 gallons, against 894,862,159 gallons during the same period in 1894. The details of the shipments are as follow:—

|                       | CRUDE PETROLEUM.          | Gallons.   |
|-----------------------|---------------------------|------------|
| Total, December, 1895 | .....                     | 10,798,891 |
| " " 1894              | .....                     | 8,140,778  |
|                       | NAPHTHAS.                 |            |
| Total, December, 1895 | .....                     | 2,297,200  |
| " " 1894              | .....                     | 1,565,285  |
|                       | ILLUMINATING.             |            |
| Total, December, 1895 | .....                     | 63,482,769 |
| " " 1894              | .....                     | 70,043,714 |
|                       | LUBRICATING AND PARAFFIN. |            |
| Total, December, 1895 | .....                     | 3,962,538  |
| " " 1894              | .....                     | 3,309,939  |
|                       | RESIDUUM.                 |            |
| Total, December, 1895 | .....                     | 43,848     |
| " " 1894              | .....                     | 504        |

**THE CUBAN SUGAR CROP.**—According to the latest information, the Cuban sugar crop for this year is estimated as low as 100,000 tons, against 1,100,000 last year, owing to the damage caused by the revolution. The most sanguine estimate was 300,000 tons. The market is accordingly strong.

**PROSPECTING FOR COAL AT IRLAM.**—Boring operations are now being prosecuted by the Manchester Corporation on Irlam Moss in search of coal. A depth of between 50 and 60 feet has already been reached, 13 feet of moss, 18 feet of clay, and seven or eight feet of gravel having been passed through. It is believed that valuable seams of coal underlie the whole of the Irlam Moss, and further that they are of a reasonable depth.



## Correspondence.

\*We do not hold ourselves responsible for the opinions expressed by our correspondents.

### IS THERE ANY DANGER IN BONE MANURES?

(To the Editor of the Chemical Trade Journal.)

SIR,—A farmer, who for many years has used bone manure for his roots, and used 6 cwt. per acre, has lost a large number of ewes, the ewes eating the shells of the turnips, after the ewe hogs. A veterinary has given his opinion that the sheep died from blood poison. He says it was caused by the bone manure. He also says that some of the bone may be from animals that died from infectious disease, and that the bone from diseased animals would cause the sheep to die from blood poison. I should say the bones were dissolved in acid before Christmas, 1894, and in June or July, 1895, the manure was used for the turnips; the above sheep did not eat the turnips till January and February, 1896. For my part I should say it would be impossible, if part or the whole of the bone came from diseased animals, that, after being dissolved and then applied to the land, and the turnips grown from the manure for any animal eating the turnips they should be poisoned. I may say I supplied the manure. Will you be so good as to give me your opinion, and I should be glad to hear the opinion from any of your many readers of the *Chemical Trade Journal*. If what the veterinary says is true it will be a great blow for bone as a manure?—Yours, &c., T. C. G.

[We are inclined to think, with our correspondent, that they must be very hardy disease germs to withstand vitriol. We should think the short commons left after the ewe hogs had finished had more to do with their demise.—ED., C.T.J.]

## Trade Notes.

**COPPER IN PEAS.**—At the Southwark Police Court recently, H. C. Summers, trading as George Mence Smith, at High-street, Borough, appeared to an adjourned summons taken out at the instance of Mr. Arthur A. Grist, sanitary inspector to the St. Saviour's District Board of Works for selling preserved peas mixed or coloured with an ingredient injurious to health—namely, eight-tenths of a grain of copper per pound of peas. Mr. Frank Dodd, barrister, prosecuted on behalf of the parish; and Mr. Bonsey, barrister, defended. Further evidence for the defence was given by Dr. Paul, F.I.C., and, having heard Mr. Bonsey, Mr. Fenwick said it was an important matter, and he would adjourn the case in order that he might consider his decision.

**COMPARISON OF X RAYS WITH ORDINARY LIGHT.**—Some interesting experiments have been made by a gentleman in Renfrew who has obtained shadowgraphs of different objects through wood and other substances between the poles of an induction machine made on Mr. Wimshurst's principle. He has also found, both with the rays—X or otherwise—excited by a highly-exhausted vacuum tube, or by the Wimshurst induction machine without any vacuum tube, that on placing strips of gelatine, coloured, in various thicknesses, in front of a photographic plate, the blue is least sensitive, red next, and yellow most; in other words, the waves which penetrate the coloured media are exactly opposite to those of light. In ordinary photography, to place blue glass in front of the window of your dark-room would be to insure all the actinic rays falling on your work, so red and yellow are employed; while with these X rays a blue glass cuts them out completely. This apparently explains why German glass is so much better than English for the vacuum tubes in which the X rays are to be produced. German glass at high exhaustion phosphoresces a yellow-green colour; English, a beautiful blue. The English glass is opaque to the X rays, while the German is transparent. The conclusion is that the rays can be excited without a vacuum tube in ordinary air, and that they are not ultra-violet.

## Market Reports.

### TAR AND AMMONIA PRODUCTS.

Benzols are steady, prices being much the same as last week. Carbolic acids are very firm, and a further advance has been made during the week: Crude, 60%, is now quoted 2s 3d., and 40% crystals 8½d. Solvent naphtha and crude remain at 1s 6d. and 10d. respectively. Anthracene and creosote unaltered. Pitch has been in better demand, with prospect of steadiness, at 35s., f.o.b., East Coast.

Sulphate of ammonia is reported lower, but the values are mainly nominal. Speculators have apparently covered their needs, and are

now trying to depress the market. There has been a striking absence of orders during the past few days. Nearest values are:—Beckton £8. 7s. 6d., London outside makes £8. 8s. 9d., Liverpool, Hull, and Leith all £8. 10s., prompt. Nothing is doing in forward. Nitrate quiet.

### LIVERPOOL MINERAL MARKET.

Our market for minerals has on the whole ruled very firm during the week. Manganese arrivals continue very slow, whilst the demand has been materially increased; spot stocks have been entirely cleared, and prices have considerably advanced, with a stronger prospect for the future. Ground manganese has therefore improved, and meets with a good demand at £7., £9., £11., and £13. 10s. per ton. Sulphate of manganese continues to sell freely. Manganiferous iron ore is in strong demand, and prices have advanced fully 1s. or 1s. 6d. per ton. Chrome ore: Arrivals have somewhat increased; prices are unaltered. Bauxite: The demand continues good, and is likely to do so in view of the increase in the consumption, where large quantities will be required; prices are firm at 20s. per ton for first, 16s. per ton for second, and 12s. per ton for third quality, f.o.b. French chalk: Arrivals do not keep pace with the demand, and stocks are nil; prices are therefore strong at 70s. to 75s., 80s. to 90s., and 100s. to 110s. per ton for "Angel White" brands, according to grade. Wolfram and scheelite: Spot stocks are very low, especially of high grade; prices are therefore firm, with a tendency to increase. Arsenic continues strong at £17. to £19. per ton. Fuller's earth steady at unaltered prices—55s. for ground, 75s. for impalpable powder, and 50s. for lump. "Emerald" and other brands. Rottenstone: The demand for prime qualities is good at full prices—£8. 10s. to £14. per ton, according to grade. Ochres and umbers sell readily, good staining qualities being in demand; 60s. to 65s. per ton for J.C. ochre, and about 40s. per ton for umber. Carbonate and sulphate of barytes are in improved demand at full prices. Plumbago: The demand continues good, especially for foundry and lubricating qualities, which sell freely at £6. to £10. per ton, according to grade; prime Ceylon is in steady demand at £15. to £20. per ton, according to quality. Pumice stone is inquired for, ground being done at £6. to £7. per ton, and superior Teneriffe lump being done at £7. 10s. per ton. Bog ore is in fair demand at 22s. 6d. to 25s. per ton. Magnesite: Raw lump and powdered are steady at somewhat higher prices.

### THE METAL MARKETS.

**LONDON, WEDNESDAY.**—Pig iron, lower: Scotch warrants closed at 47s. 1d.; Middlesbrough, 38s. 2d. cash, and hematite, 48s. 7d. Copper, weaker: Chili bars, G. O. B.'s and G. M. B.'s closed at £45. to £45. 5s. cash, and £45. 7s. to £45. 12s. 6d. three months. Tin, easier: Straits closed at £60. 7s. 6d. to £60. 17s. 6d. cash, and £60. 17s. 6d. to £61. 7s. 6d. three months. Australian, £61.; English ingots, £64. 10s. Lead, firm: Spanish, £11. 7s. 6d.; English, £11. 10s.; Silesian spelter, ordinary, £15. 2s. 6d. Nickel, 1s. 2½d. Antimony, £29. 10s. to £30. Quicksilver: first hands, £7. 2s. 6d.; second hands, £7. 2s. Copper shares, quiet: Cape, 2½ to 2½; Copiapo, 2½ to 2½; Libiola, 3 to 3¼; Mason and Barry, 2¼ to 3; Rio Tinto, 18½ to 18½; Tharsis, 5 to 5¼.

**GLASGOW, WEDNESDAY.**—Market steady, with small business. Scotch done at 47s. 1d. and 47s. 1½d. cash, also at 47s. 3½d. one month; closing with buyers at 47s. 1d. cash, sellers ask 47s. 1½d. Cleveland closes with buyers at 38s. 2d. cash; sellers ask 38s. 3d. Cumberland hematite done at 48s. 7d. cash, closing with buyers at 48s. 7d. cash, sellers ask 48s. 7½d. Middlesbrough hematite done at 46s. 2d. and 46s. 2½d. cash; closing with buyers at 46s. 2d. cash, sellers ask 46s. 2½d.

### REPORT ON MANURE MATERIAL.

The market has been quiet during the greater part of the week, and so far as there has been any change in values it has been in buyers' favour.

The Continent is still inquiring for 75/80% Florida rock, and it is reported that further business has been done to a cotton port at 6d. per unit. United Kingdom buyers still hang back. Quotations for Peace River, South Carolina River, and Algerian rocks are unchanged.

There is nothing fresh to report in River Plate bones. On spot, £4. per ton required for crushed Kurrachee bones, but for shipment £3. 17s. 6d. would now do. Bombay bone meal offers at £3. 15s. per ton, for shipment, and a shade less would probably do for parcels arrived ex quay Liverpool.

Nitrate of soda is quiet but firm. Due cargoes are worth about



7s. 10½d. per cwt., ordinary quality. On spot there are sellers of ordinary quality at 7s. 10½d. per cwt., and of fine quality at 8s.

Home-prepared dried blood, fine test, offers at 7s. 6d. per unit of ammonia, free on rails at works.

## LIVERPOOL OIL AND COLOUR MARKET.

WEDNESDAY.

OILS.—Palm oil is steady. There has been a fairly good business doing, though to-day things are rather quieter. Olive is strong, and prices have been advanced about 10s. to 20s. per tun. Spanish is quoted £27. 15s. to £28. 10s., according to shipment. Linseed is firm, with a moderate inquiry for Liverpool makes in export casks at 20s. 6d. to 21s. per cwt. Cottonseed is steady, though rather easier, Liverpool refined now being quoted 17s. 3d. to 17s. 6d. per cwt. Castor oil is unchanged, good seconds Calcutta standing at 2½d. to 2¾d., and first pressure French rather easier at 2¾d. ex quay, and 2½d. per lb. store. Tallow, though still fairly well inquired for, is quieter. Resin is in small demand, spot parcels moving fairly well at full prices. Spirits of turpentine are firm at 21s. 6d. per cwt., spot. Petroleum quiet: American 6½d. to 7½d., and Russian refined 6d. per gallon.

COLOURS are steady, without alteration in prices. Ochres: Oxfordshire, common, £10., medium, £12., best, £15. Derbyshire, common, 40s.; medium, 50s., best, 60s.; Welsh, best, 90s., seconds, 50s., and common, 18s.; Irish, Devonshire, 40s. to 45s.; French, J.C., 60s. to 65s.; M.C., 65s. to 67s. 6d. Umber: Turkish quiet; Devonshire, 50s. to 55s. White lead, £16. Red lead unchanged. Venetian red, £6. to £10. Cobalt: Prepared oxide, 9s. 9d.; black, 9s.; blue, 6s. Zaffres: No. 1, 3s. 6d.; No. 2, 2s. 6d. Oxide of iron: Common, £7.; medium, £10.; finest, £20. Zinc oxide, £22. 10s. to £25.

## MISCELLANEOUS CHEMICAL MARKET.

In the alkali trade there are no changes of any consequence to note during the past week. The works are all fairly engaged with orders for export and home trade. Caustic soda is, if anything, a turn easier, and current quotations may be taken as follows:—F.o.b. Liverpool, 77%, £9. 7s. 6d.; 74%, £8. 10s.; 70%, £7. 10s.; 60%, £6. 10s. per ton, 10-ton lots and upwards. Bleaching powder very firm, at £7., f.o.b., makers' works, for home trade, and £7. 5s. hardwoods, f.o.b., subject to some exceptions for certain markets. Chlorate of potash 4½d. per lb., though some resales may be had still at a fraction lower. Chlorate of soda, 6½d. to 6¾d. per lb. Sulphur, £3. 12s. 6d., f.o.b. Saltcake firm, at 25s. in bulk. Alkali, 58%, in bags, steady, at £3. 7s. 6d. makers' works. Soda crystals, 37s. 6d. per ton, bags, f.o.b. Sulphate of copper has undergone further advance to £17. 5s., f.o.b. White powdered arsenic, £18. 10s. to £19. paid for March-April, and supplies are insufficient for requirements. Carbolic crystals further advanced to 8½d. for 39/40°, and very scarce. Acetate of lime nominal, at £4. 15s. to £5., c.i.f., for brown, but no buyers. Grey, £8. to £8. 10s. per ton. Sugar of lead in rather slow demand in all qualities, and prices unaltered. Yellow prussiate of potash easier, at 7½d. per lb. Cyanide, 95/97%, at 1s. 2½d. per lb. Muriate of ammonia in fair demand, at £23. per ton. Other ammonia salts steady in price, and in moderate request. Potash, caustic and carbonate, continue to sell freely, and are without alteration in values. Reports generally agree as to quietness of trade in all districts.

## TYNE CHEMICAL REPORT.

TUESDAY.

Chemicals continue dull, with only a moderate demand. Prices are still on a basis of £2. 2s. 6d. per ton, gross weight, locally, for soda crystals: £9. 5s. per ton for 76/77% caustic, and £7. 10s. to £7. 15s. for 70%. Sulphur, scarce, at £3. 17s. 6d. per ton. Other quotations as under:—

Bleaching powder, softs, £7. 5s. per ton, nett; hards, £7. 10s. per ton, nett; caustic soda, 76/77%, £9. 5s. per ton, nett; do., 70%, £7. 15s. per ton, nett; recovered sulphur, 2 cwt. bags, £3. 17s. 6d. per ton, nett; soda ash, 48%, £3. 15s. per ton, nett; do., 52%, £3. 17s. 6d. per ton, nett; do., 56%, £4. per ton, nett; alkali, 36%, £2. 15s. per ton, nett; white alkali, 48%, £4. 10s. per ton, nett; do., 50%, £4. 15s. per ton, nett; do., 52%, £5. per ton, nett; hyposulphite of soda, 5-7 cwt. casks, £6. 5s. per ton, nett; do., 1 cwt. kegs, £7. per ton, nett; silicate of soda, 75° Tw., £2. 12s. 6d. per ton, nett; do., 100° Tw., £3. per ton, nett; do., 140° Tw., £3. 7s. 6d. per ton, nett; soda crystals, casks, £2. 2s. 6d. per ton, gross weight; do., 2 cwt. bags, £2. 2s. 6d. per ton, nett weight; chlorate of potash, 5d. per lb., less 6%; pearl hardening, £3. per ton, nett; pure white sulphate of alumina, £3. 17s. 6d. per ton, nett; blanc fixe, £7. 5s. per ton, nett; chloride of barium, refined crystals, £6. 15s., per ton, nett; do., 90/95%, crude calcined,

£6. per ton, nett; sulphide of barium, crystals, £4. 15s. per ton, nett; carbonate of alumina, £30. per ton, nett; aluminate of soda, £30. per ton, nett.

SALT.—South Durham salt, unchanged, at 9s. 6d. per ton, f.o.b. Tees.

COALS are only quiet, with moderate business doing. A large Swedish contract for gas coals has just recently been booked to the Tyne, the price showing a slight reduction as compared with last year. Coke is firmer, and there is a good demand for home consumption. To-day's quotations:—Best Northumbrian steam, 7s. 9d. to 8s. per ton; second qualities, 6s. 9d. to 7s. per ton; small steam, 3s. 9d. to 4s. per ton; bunker coals, 6s. 3d. to 6s. 6d. per ton; gas coals, 7s. to 7s. 3d. per ton; household coals, dull, 10s. to 10s. 6d. per ton; coke, firm, 14s. 6d. to 15s. 6d. per ton.

## WEST OF SCOTLAND CHEMICALS.

GLASGOW, TUESDAY.

During the course of last week sulphate of ammonia plucked up a little more, and now there seems to be no sellers under from £8. 11s. 3d. to £8. 12s. 6d. spot, Leith. At the same time inquiry is not by any means brisk, which accounts for the light character of the advance. There is nothing at all doing in forward supplies, anything as yet offered being much too low to tempt even the least unwilling of makers. The figures against the solid paraffins, as given below, stand unchanged, but buyers are to note that for actual business lower quotations are certainly to be had, from some of the producers at least, although these concessions are kept very quiet. The paraffin oils are all in fair demand at prices pretty well maintained. The general chemicals market continues to retain and improve the recent better feeling, and prices are all firm. Prompt business is not increased as yet to any great degree, but inquiry about forward supplies is active.

Chief prices current are:—Soda crystals, £2. 2s. 6d., nett, Tyne; soda ash, 48/56°, £3. 15s. to £4. 15s. nett, Tyne; white alkali, 48/52°, £4. 10s. to £5. nett, Tyne; alum in lump, £5. 10s. nett, Glasgow; caustic soda, white, 76° £9. 5s., 70/72° £7. 12s. 6d., 60/62° £6. 12s. 6d., and cream 60/62° £6. 10s., all nett, Liverpool; bleaching powder, £6. 5s. to £7. 5s. nett, Tyne; saltcake, 27s. 6d.; borax, English, refined, £20., and boracic acid, £30. nett, Glasgow; bicarbonate of soda, 5-cwt. casks, £6. 10s., and 1-cwt. casks £6. 15s. nett, Liverpool; bichromate of potash, 4½d. nett, for Scotch and English deliveries (for export, 4½d. nett, f.o.b. Glasgow); bichromate of soda, 3¾d. nett, for Scotch and English deliveries (for export, 3½d. nett, f.o.b. Glasgow); chlorate of potash, 5d. less 5%, Liverpool; nitrate of soda, 7s. 10½d. to 8s. 1½d.; sulphate of ammonia, £8. 11s. 3d. to £8. 12s. 6d. prompt, f.o.b. Leith; salammioniac, first and second white, £39. and £37. nett, any port; sulphate of copper, £16. 10s. to £16. 15s., less 5%, Liverpool; paraffin scale, hard, 1¾d., and soft, 1¾d. to 1¾d. per lb.; paraffin wax, 120° semi-refined, 2¾d. to 2¾d.; paraffin spirit (naphtha), 7½d. to 8d. per gallon; paraffin oil (burning) No. 1, 6½d., and crystal, 6¾d., at works, for Scotch buyers (English sales about ½d. lower); ditto (lubricating) 865° £5., 885° £5. 10s. to £6., and 890/895° £6. to £6. 10s. Week's imports of sugar at Greenock were 69,138 bags beet unrefined and 500 bags beet refined.

## HULL PAINT, OIL, AND COLOUR REPORT.

TUESDAY.

OILS.—The market for seed oils remains very quiet, with prices little changed, with the exception of linseed oil, which has declined 5s. per ton. Some change in the price of cottonseed oil is evidently expected in the future, more than appears upon the surface, by those who "know," if the large amount being constantly warehoused is a sure criterion; no doubt the very open season and the present slow demand for cakes may have more influence upon future prices than the present. The import of linseed during the week has been 3,250 quarters, making a total for the year of 71,380 quarters, against, for the same period a year ago of 37,161 quarters. Linseed oil has declined about 5s. per ton on the spot, closing quiet at 18s. 10½d. naked; March-April offers at 18s. 9d.; May-August, 18s. 7½d.; and September-December, 18s. 6d.; boiled and refined from £1. to £2. per ton extra. The export for the week has been 1,680 cwt. The import of cottonseed for the week has been 2,641 tons, making a total for the year of 38,623 tons, against 47,674 tons a year ago. Refined cotton oil remains quiet at 15s. 3d. naked, spot; March-April, 15s. 4½d.; and May-August, 16s. 1½d. Crude worth 13s. 7½d. spot, naked. Casks £1. and ordinary barrels £1. 10s. per ton extra. Olive oil, £29. Spirits of turpentine, 21s. 9d. Castor oil unchanged. Cod oil from £16. to £19. per ton. Neutral liquid soap, £15. per ton. Locomotive grease, £12. per ton.

CAKES.—The continued open weather is unsuited for a good demand in feeding cakes. Linseed cakes: 95% pure, £6. 5s. per ton; Russians, £5. 17s. 6d. to £6. 2s. 6d. Oil cakes, £5. 2s. 6d. Cotton cakes have a little firmer tone: best makes, £3. 10s. 6d.



£3. 11s. 3d.; seconds, £3. 6s. 3d. Rape cakes: Black Sea, £2. 6s. 3d.; East India, £3. 7s. 6d. per ton.

PAINTS.—The demand for the time of year continues good and increasing, with prices unchanged.

## New Companies.

**Clarkson-Stanfield Ore Reduction Co., Ltd.**—CAPITAL, £100,000., in £1. shares. This company has been formed to work inventions for the treatment of ore without water. The subscribers to the memorandum of association are:—P. Strickland, 6, Crosby-square, E.C., broker; J. Drake, 6, Crosby-square, E.C., clerk; W. S. Lee, 6, Great Winchester-street, E.C., secretary; W. A. Hills, Panmure-road, Sydenham, metallurgist; E. H. Davies, 6, West-cliff, Eastbourne, engineer; P. A. Thomas, 35, Queen Victoria-street, E.C., engineer; H. F. Brown, 43, London Wall, E.C., solicitor.

**Walkers, Ltd.**—CAPITAL, £40,000., in £10. shares, of which 2,000 are preference. This company has been formed to carry on the business of tanners, curriers, etc. The subscribers to the memorandum of association are:—W. S. Walker, Wood Bank, Erith, tanner; A. J. Walker, Wood Bank, Erith, tanner; W. Walker, Oak Lea, Whitehaven, tanner; H. W. Walker, Oak Lea, Whitehaven, tanner; A. Walker, Oak Lea, Whitehaven, tanner; C. H. Walker, Wood Bank, Erith, tanner; Mrs. E. Walker, Wood Bank, Erith.

**Minbu Oil Co. of Burmah, Ltd.**—CAPITAL £20,000., in £10. shares. This company has been formed to acquire 7½ square miles of land in Upper Burmah, and to carry on the business of oil refiners, etc., drysalers, and paint and colour manufacturers. The subscribers to the memorandum of association are:—R. G. Orr, 73, Fitzjohn's-avenue, Hampstead, merchant; H. Gibson, 8, Great St. Helens, E.C., solicitor; S. S. Gladstone, 67, Cornhill, E.C., merchant; J. F. Ogilvy, 67, Cornhill, E.C., merchant; A. Stuart, 21, St. Mary Axe, E.C., gentleman; C. L. W. Jackson, Normandy Hall, N.R., Yorks.,

gentleman; B. Parker, St. Michael's Rectory, Cornhill, solicitor.

**Amelia Nitrate Co., Ltd.**—CAPITAL, £155,000., in 500,000 shares of £10. ordinary £10. shares. This company has been formed to adopt an agreement with Weber and Co. to acquire certain nitrate grounds near Pisagua. The subscribers memorandum of association are:—W. Greenwell, 2, Finch-lane stockbroker; A. Q. Faslem, 17, Phillbeach Gardens, S.W., mer; H. G. Schmidt, 17, Hardenburg-street, Charlottenburg, mer; Schroder, 145, Leadenhall-street, E.C., merchant; E. Steindinandstr., 56, Hamburg, merchant; G. Stielow, 3, Bernard Russell-square, retired; H. F. Tiarks, 145, Leadenhall-street, merchant.

**Ramsbottom Paper Mill Co., Ltd.**—CAPITAL, £144,000. 54,000 preference shares of £1. and 18,000 ordinary of £5. company has been formed to acquire the business of the Ramsbottom Paper Mill Co. and to trade as papermakers, importers, deal brokers, etc. The subscribers to the memorandum of association are:—E. Partington, Caston, Glossop, paper manufacturer; T. Holcombe Hall, Ramsbottom, manufacturer; C. L. Sams Booth-street, Manchester, solicitor; R. P. Skelton, Tower Ramsbottom, papermaker; J. Greenhalgh, Irwell Mount, bottom, manager; J. A. Porritt, The Cliffe, Ramsbottom, facturer; J. H. Maden, Spring Bank, Ramsbottom, agent.

## Gazette Notices.

### PARTNERSHIP DISSOLVED.

J. HEARLE, M. A. HEARLE, and P. H. DAWES, manure and agricultural makers, Penryn, under the style of J. Hearle and Son.

G. WADDINGTON and W. G. L. HARVEY, bone boilers and fat melters, W. Lane, Hackney Wick, N.E.

### BANKRUPTCY ACTS, 1883 and 1890.

CROSSLEY, CHAS. PLATT, Ipswich, oil cake broker.

## IMPORTS OF CHEMICAL PRODUCTS

### AT THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

| LONDON.                   |                      |  | Camphor—                               |  |  | Belgium, 100 kgs.             |  |  | Indigo              |  |  |
|---------------------------|----------------------|--|----------------------------------------|--|--|-------------------------------|--|--|---------------------|--|--|
| Week ending February 8th. |                      |  | Hong Kong, 130 pks. City Coml. Wf. Co. |  |  | Germany, 9                    |  |  | E. Indies, 156 cts. |  |  |
| <b>Acetic Acid—</b>       |                      |  | Japan, 148 R. Warner & Co.             |  |  | Holland, 6 cs.                |  |  | P.                  |  |  |
| Holland, 127 pks.         | A. & M.              |  | <b>Caoutchouc—</b>                     |  |  | R. Greening                   |  |  | E. Indies, 156 cts. |  |  |
| " 100                     | Zimmermann           |  | Germany, 14 c. Forbes, Forbes & Co.    |  |  | Domeier & Co.                 |  |  | " 10                |  |  |
| " 20                      | Beresford & Co.      |  | Singapore, 54 R. & J. Henderson        |  |  | Craven & Co.                  |  |  | " 19                |  |  |
| " 20                      | Hernu, Peron & Co.   |  | France, 9 H. Rooke, Sons               |  |  | J. Barber & Co.               |  |  | " 9                 |  |  |
| " 20                      | H. Wallace & Co.     |  | Aden, 7 Clarke & Smith                 |  |  | H. Lorenz                     |  |  | " 89                |  |  |
| <b>Acetone—</b>           |                      |  | " 16 Forbes, Forbes & Co.              |  |  | <b>Cream of Tartar—</b>       |  |  | " 57                |  |  |
| Germany, 1 pk.            | H. Lorenz            |  | " 8 Gray, Dawes & Co.                  |  |  | Spain, 8 pks.                 |  |  | " 55                |  |  |
| <b>Alkali—</b>            |                      |  | Singapore, 23 L. & I. D. Jt. Co.       |  |  | Italy, 5                      |  |  | " 14                |  |  |
| France, 93 c.             | J. Harrison          |  | Mozambique, 17                         |  |  | France, 10                    |  |  | " 21                |  |  |
| <b>Alum—</b>              |                      |  | Zanzibar, 153                          |  |  | " 41                          |  |  | " 157               |  |  |
| Holland, 165 pks.         | Ohlenschlager Bros.  |  | Madagascar, 169                        |  |  | " 4                           |  |  | " 92                |  |  |
| <b>Alumina Sulphate—</b>  |                      |  | " 90                                   |  |  | " 4                           |  |  | " 14                |  |  |
| Holland, 55 pks.          | H. Wallace & Co.     |  | <b>Carbonic Acid—</b>                  |  |  | Holland, 20                   |  |  | " 30                |  |  |
| <b>Alumite—</b>           |                      |  | Holland, 80 pks.                       |  |  | <b>Creosote—</b>              |  |  | " 7                 |  |  |
| Sydney, 78 t.             | J. Allen & Co.       |  | <b>Castor Oil—</b>                     |  |  | France, 4 pks. 4 cks.         |  |  | " 64                |  |  |
| <b>Ammonium Nitrate—</b>  |                      |  | France, 14 brls.                       |  |  | Germany, 50 pks.              |  |  | " 3                 |  |  |
| Germany, 5 pks.           | Petri Bros.          |  | E. Indies, 100 cs.                     |  |  | " 100 bgs. Hernu, Peron & Co. |  |  | " 3 pks. Mon        |  |  |
| <b>Antimony Ore—</b>      |                      |  | France, 15                             |  |  | <b>Dextrine—</b>              |  |  | Limon, 7            |  |  |
| Portugal, 50 t.           | J. Bamber            |  | Italy, 10                              |  |  | Germany, 50 pks.              |  |  | E. Indies, 1,909    |  |  |
| <b>Asbestos—</b>          |                      |  | Belgium, 20 pks.                       |  |  | " 100 bgs. Hernu, Peron & Co. |  |  | " 60                |  |  |
| Italy, £90                | Imperial Asbestos Co |  | France, 12                             |  |  | <b>Dyestuffs—</b>             |  |  | " 244               |  |  |
| " 20                      | Deering & Robottom   |  | Germany, 60                            |  |  | Annatto                       |  |  | " 60                |  |  |
| " 316                     | J. Barber & Co.      |  | Holland, 4 c.                          |  |  | Ceylon, 65 pks.               |  |  | " 14                |  |  |
| " 150                     | British Asbestos Co. |  | <b>Caustic Potash—</b>                 |  |  | Argols                        |  |  | " 17                |  |  |
| Germany, 38               | T. H. Lee            |  | Belgium, 20 pks.                       |  |  | Cape Town, 21 pks.            |  |  | " 16                |  |  |
| Italy, 421                | Pickford & Co.       |  | France, 12                             |  |  | Italy, 182                    |  |  | " 2 cs.             |  |  |
| France, 10                | T. H. Lee            |  | Germany, 60                            |  |  | " 781                         |  |  | " 8 pks.            |  |  |
| U. States, 144            | Furness, Withy & Co. |  | Holland, 4 c.                          |  |  | Cochineal                     |  |  | " 16                |  |  |
| <b>Boracic Acid—</b>      |                      |  | <b>Chemicals (otherwise under.)</b>    |  |  | Canaries, 10 pks.             |  |  | Logwood             |  |  |
| Italy, 65                 | London Asbestos Co.  |  | Germany, £6                            |  |  | Cutch                         |  |  | B. W. L., 2 t.      |  |  |
| Holland, 80 pks.          | Van Geelkerken & Co. |  | Belgium, 6 cs.                         |  |  | Singapore, 450 pks.           |  |  | Hayti, 17           |  |  |
| Italy, 20                 | Girard Frs. & Co.    |  | U. States, 21 cks.                     |  |  | E. Indies, 51                 |  |  | <b>Myrabolams</b>   |  |  |
| <b>Barium Chloride—</b>   |                      |  | France, 45                             |  |  | Extracts                      |  |  | " 972               |  |  |
| Germany, 23 pks.          | Petri Bros.          |  | Germany, 4                             |  |  | Germany, 206 pks.             |  |  | " 1,660             |  |  |
| <b>Barytes—</b>           |                      |  | Holland, 4 c.                          |  |  | Canada, 120                   |  |  | " 1,296             |  |  |
| Holland, 69 cks.          | A. Zumbeck & Co.     |  | <b>Caustic Soda—</b>                   |  |  | Germany, 300                  |  |  | <b>Saffron</b>      |  |  |
| " 24                      | Taylor Bros.         |  | Belgium, 16 pks.                       |  |  | B. Ayres, 10                  |  |  | Spain, 2 pks.       |  |  |
| Germany, 45               | W. Harrison & Co.    |  | France, 43                             |  |  | <b>Gambier</b>                |  |  | Shumac              |  |  |
| Holland, 112              | "                    |  | Germany, 99                            |  |  | Singapore, 1,593 pks.         |  |  | Italy, 100 pks.     |  |  |
| <b>Borax—</b>             |                      |  | France, 15                             |  |  | " 2,266                       |  |  | " 500               |  |  |
| Italy, 9 pks.             | G. Boor & Co.        |  | <b>Caustic Soda—</b>                   |  |  | " 440                         |  |  | " 1,000             |  |  |
| Holland, 40 pks.          | J. Owen              |  | Belgium, 16 pks.                       |  |  | " 891                         |  |  | " 200               |  |  |
| <b>Borax—</b>             |                      |  | France, 15                             |  |  | " 530                         |  |  | " 500               |  |  |
| <b>Borax—</b>             |                      |  | France, 15                             |  |  | " 2,509                       |  |  | " 500               |  |  |
| <b>Borax—</b>             |                      |  | France, 15                             |  |  | " 2,509                       |  |  | " 500               |  |  |



|                               |                   |                                |
|-------------------------------|-------------------|--------------------------------|
| <b>Tanner's Bark</b>          | 38 t.             | Devitt & Hett                  |
| <b>Adelaide,</b>              | 80                |                                |
| <b>Valonia</b>                |                   |                                |
| A. Turkey,                    | 79 t.             | A. & W. Nesbitt                |
| "                             | 80                | F. Clayton & Co.               |
| "                             | 10                | Marshall & French              |
| "                             | 26                | A. Laming & Co.                |
| "                             | 104               | M. D. Co.                      |
| <b>Farina—</b>                |                   |                                |
| Holland,                      | 50 pks.           | H. Lorenz                      |
| France,                       | 0                 | Hernu, Peron & Co.             |
| Holland,                      | 50                | R. G. Hall & Co.               |
| Cape Town,                    | 1                 | Montgomerie & Co.              |
| Germany,                      | 100               | Beck & Pollitzer               |
| <b>French Chalk—</b>          |                   |                                |
| Italy,                        | 690 pks.          | Harrison & Co.                 |
| "                             | 90                | C. J. Gerhardt                 |
| Austria,                      | 100 bgs.          | R. Johnson & Co.               |
| <b>Glucose—</b>               |                   |                                |
| U. States,                    | 950 pks. 4,260 c. | L. Sutro & Co.                 |
| "                             | 1,000             | 1,000 c. L. Norman & Co., Ltd. |
| "                             | 50                | 300 E. & T. Pink               |
| "                             | 550               | 550 E. Dixon                   |
| "                             | 2,000             | 1,500 Fellows,                 |
| "                             | 1,275             | 1,400 Morton & Co.             |
| "                             | 250               | 250 G. Clark                   |
| "                             | 250               | 250 Trier, Meyer & Co.         |
| "                             | 250               | 250 L. & I. D. It. Co.         |
| Holland,                      | 51                | 51 J. Barber & Co.             |
| U. States,                    | 500               | 500 Humphery & Co.             |
| "                             | 510               | 500 Ohlenschlager              |
| "                             | 4,000             | 4,000 Pearce, Pelly & Co.      |
| Germany,                      | 12                | 100 J. Knill & Co.             |
| U. States,                    | 250               | 250 C. S. Lovell               |
| "                             | 500               | 500 Union Ltge. Co., Ltd.      |
| "                             | 3,030             | 7,530 R. G. Hall & Co.         |
| <b>Glue—</b>                  |                   |                                |
| "                             | £966              |                                |
| <b>Litharge—</b>              |                   |                                |
| Germany,                      | 26 cks.           | H. Wallace & Co.               |
| <b>Magnesia—</b>              |                   |                                |
| Holland,                      | 20 pks.           | Beresford & Co.                |
| <b>Manure—</b>                |                   |                                |
| France,                       | 3 t.              | J. Burnett & Sons              |
| E. Indies,                    | 130               | A. Hunter & Co.                |
| "                             | 50                | Dyster, Nalder, & Co.          |
| Belgium,                      | 10                | B. Jacob & Sons                |
| France,                       | 50                | W. E. Cole                     |
| E. Indies,                    | 350               | Fox, Roy, & Co.                |
| Belgium,                      | 25                | West & Penrose                 |
| Brisbane,                     | 30                | Queensland Meat and Ex. Ag.    |
| <b>Methyl Alcohol—</b>        |                   |                                |
| Belgium,                      | 10 dms.           | Stein Brs.                     |
| U. States,                    | 24                | A. Chapman                     |
| "                             | 120 brls          | J. Whaley                      |
| <b>Mica—</b>                  |                   |                                |
| E. Indies,                    | £85               | W. M. Smith & Sons             |
| <b>Nitre—</b>                 |                   |                                |
| Chili,                        | 9,768 bgs.        | Anglo-Contl G. Wks.            |
| <b>Ochre—</b>                 |                   |                                |
| France,                       | 34 cks.           | D. Storer & Sons               |
| Holland,                      | 2                 | 7 pks. Phillips & Graves       |
| France,                       | 344 brls.         | W. Harrison & Co.              |
| <b>Phosphate—</b>             |                   |                                |
| Bona,                         | 2,200 t.          | R. England & Co.               |
| <b>Phosphate Rock—</b>        |                   |                                |
| Florida,                      | 2,500 t.          | Anglo-Contl. G. Wks.           |
| France,                       | 210               | D. de Pass & Co.               |
| <b>Pitch—</b>                 |                   |                                |
| Germany,                      | 78 brls.          | C. B. Leighton                 |
| S. Russia,                    | 411               | Galbraith, Pembroke, & Co.     |
| <b>Plumbago—</b>              |                   |                                |
| Ceylon,                       | 76 brls.          | L. & I. D. Jt. Co.             |
| Germany,                      | 20 cks.           | B. Gallaway                    |
| Ceylon,                       | 59                | R. G. Hall & Co.               |
| "                             | 134               | J. Thredder, Son, & Co.        |
| <b>Potassium Bicarbonate—</b> |                   |                                |
| Holland,                      | 8 pks.            | A. & M. Zimmermann             |
| <b>Potassium Carbonate—</b>   |                   |                                |
| Germany,                      | 1,06 c.           | Beresford & Co.                |
| France,                       | 135               | J. A. Reid                     |
| Germany,                      | 407               | Perkins & Homer                |
| France,                       | 105               | W. E. Cole                     |
| "                             | 100               | Petri Brs.                     |

|                             |              |                              |
|-----------------------------|--------------|------------------------------|
| <b>Potassium Chloride—</b>  |              |                              |
| Germany,                    | 600 pks.     | W. G. Blagden                |
| "                           | 800          | F. W. Berk & Co.             |
| <b>Potassium Cyanide—</b>   |              |                              |
| Holland,                    | 45 pks.      | F. Boehm                     |
| <b>Potassium Prussiate—</b> |              |                              |
| Belgium,                    | 36 pks.      | Perkins & Homer              |
| <b>Pumice Stone—</b>        |              |                              |
| Italy,                      | 113 c.       | Seaward Brs., Ltd.           |
| "                           | 6 t.         | O'Hara & Hoar                |
| "                           | 13 c.        | L. & I. Dk. Co.              |
| "                           | 9            | 10 B. Gallaway               |
| <b>Pyrites—</b>             |              |                              |
| Spain,                      | 2,030 t.     | Naylor, Benzon, & Co.        |
| <b>Quicksilver—</b>         |              |                              |
| Italy,                      | 37,500 flus. | L. & I. D. Jt. Co.           |
| "                           | 7,500        | H. Bath & Son                |
| <b>Rosin—</b>               |              |                              |
| Holland,                    | 3 cks.       | Phillipps & Graves           |
| <b>Saltpetre—</b>           |              |                              |
| E. Indies,                  | 189 bgs.     | Co-op. Lightgr. Association  |
| "                           | 176          | Perkins & Homer              |
| Germany,                    | 44 cks.      | J. Hall & Co.                |
| "                           | 69           | P. Hecker & Co.              |
| "                           | 100          | T. Merry & Co.               |
| Belgium,                    | 85 bgs.      | J. Greig                     |
| E. Indies,                  | 2,403        | Lucas & Spencer's Wf.        |
| <b>Soda—</b>                |              |                              |
| Germany,                    | 21 c.        | H. Lambert                   |
| <b>Sodium Sulphate—</b>     |              |                              |
| Holland,                    | 30 pks.      | R. W. Greeff & Co.           |
| Belgium,                    | 10           | Beresford & Co.              |
| <b>Starch—</b>              |              |                              |
| Belgium,                    | 50 pks.      | T. Ronaldson & Co.           |
| Holland,                    | 25           | T. H. Lee                    |
| "                           | 501          | Little & Johnston            |
| France,                     | 240          | B. & F. Wf. Co.              |
| U. States,                  | 100          | R. G. Hall & Co.             |
| Holland,                    | 60           | Phillipps & Graves           |
| Belgium,                    | 880          | E. & T. Pink                 |
| "                           | 1,050        | Sawer, Sons, & Co.           |
| Germany,                    | 50           | J. Hall, jr., & Co.          |
| "                           | 300          | Seaward Brs., Ltd.           |
| Belgium,                    | 474          | F. Clayton & Co.             |
| <b>Stearine—</b>            |              |                              |
| Belgium,                    | 215 bgs.     | H. Hill & Sons               |
| France,                     | 100          | H. Walbaum & Tozetti         |
| Holland,                    | 14 pks.      | J. Owen                      |
| "                           | 62           | H. Hill & Sons               |
| France,                     | 7            | G. W. Rly.                   |
| <b>Sulphur—</b>             |              |                              |
| Italy,                      | 20 t.        | G. Boor & Co.                |
| "                           | 7            | Butler, Jones, & Co.         |
| <b>Sulphuric Acid—</b>      |              |                              |
| Holland,                    | 10 pks.      | W. A. Sparrow & Co.          |
| <b>Talc—</b>                |              |                              |
| Italy,                      | £200         | G. G. Blackwell, Sons, & Co. |
| <b>Tar—</b>                 |              |                              |
| Holland,                    | 200 brls.    | J. W. Murray                 |
| "                           | 200          | Dussek Brs. & Co.            |
| <b>Tartaric Acid—</b>       |              |                              |
| Holland,                    | 3 pks.       | H. Lorenz                    |
| France,                     | 8            | B. & F. Wf. Co.              |
| Italy,                      | 36           | L. & I. D. Jt. Co.           |
| France,                     | 1            | Kirkpatrick & Co.            |
| Holland,                    | 14           | B. & F. Wf. Co.              |
| "                           | 2            |                              |
| <b>Tartars—</b>             |              |                              |
| Italy,                      | 8 pks.       | Howards & Sons               |
| "                           | 24           | Fellows, Morton, & Co.       |
| <b>Turpentine—</b>          |              |                              |
| N. Russia,                  | 52 brls.     | F. & S. Chiesman & Co.       |
| <b>Ultramarine—</b>         |              |                              |
| Germany,                    | 20 cs.       | Steinhoff, Sons, & Co.       |
| Belgium,                    | 4 brls.      | W. Harrison & Co.            |
| Holland,                    | 8 cks.       | G. Rahn & Co.                |
| "                           | 2            | Elkan & Co.                  |
| "                           | 4 cs.        | Phillipps & Graves           |
| <b>Varnish—</b>             |              |                              |
| U. States,                  | 10 pks.      | Lunham & Moore               |
| Germany,                    | 3            | T. H. Lee                    |
| Belgium,                    | 5            | Stobbs, Wilson, & Co.        |
| <b>White Lead—</b>          |              |                              |
| Germany,                    | 20 cks.      | A. Zumbach & Co.             |
| Belgium,                    | 29           | J. L. Lyon & Co.             |
| Holland,                    | 45           | Spies Brs. & Co.             |
| Germany,                    | 47           | M. Ashby, Ltd.               |
| "                           | 30           | W. A. Rose & Co.             |
| Belgium,                    | 77           | M. A. Hampton                |
| Holland,                    | 80           | T. & W. Farniloe             |
| <b>Wood Pulp—</b>           |              |                              |
| Holland,                    | 10 pks.      | J. Owen                      |
| "                           | 52           | W. G. Taylor & Co.           |
| Canada,                     | 1,011        | E. J. & W. Goldsmith         |

|                       |         |                       |
|-----------------------|---------|-----------------------|
| N. Russia,            | 129     | Thames S. T. & L. Co. |
| Germany,              | 75      | W. Friedlaender       |
| Holland,              | 664     | Phillipps & Graves    |
| Norway,               | 9       | M. G. Skramnes        |
| Sweden,               | 320     | W. G. Taylor & Co.    |
| Norway,               | 900     | W. E. Bott & Co.      |
| Holland,              | 28      | Thames S. T. & L. Co. |
| Norway,               | 400     | A. Wertheim & Co.     |
| "                     | 1,248   | E. J. & W. Goldsmith  |
| "                     | 1,950   | J. Sharp              |
| <b>Zinc Oxide—</b>    |         |                       |
| Holland,              | 87 cks. | M. Ashby, Ltd.        |
| "                     | 150     | J. Matton             |
| "                     | 100     | Burrell & Co.         |
| "                     | 500     | Soundy & Sons         |
| Germany,              | 115     | M. Ashby, Ltd.        |
| <b>Zinc Sulphate—</b> |         |                       |
| Germany,              | 30 pks. | F. Smith              |
| "                     | 30      | City Coml. Wf.        |

## LIVERPOOL.

Week ending February 6th.

|                         |              |                             |
|-------------------------|--------------|-----------------------------|
| <b>Acetic Acid—</b>     |              |                             |
| Rotterdam,              | 10 balloons  |                             |
| <b>Benzine—</b>         |              |                             |
| Philadelphia,           | 500 brls.    |                             |
| <b>Bone Ash—</b>        |              |                             |
| River Plate,            | 690 bgs.     |                             |
| <b>Borate of Lime—</b>  |              |                             |
| Antofagasta,            | 199 sks.     |                             |
| <b>Chloride—</b>        |              |                             |
| Hamburg,                | 12 cs.       |                             |
| <b>Cream of Tartar—</b> |              |                             |
| Barcelona,              | 5 cks.       |                             |
| <b>Dextrine—</b>        |              |                             |
| Hamburg,                | 50 bgs.      |                             |
| <b>Dried Blood—</b>     |              |                             |
| Rouen,                  | 12 cs.       | R. J. Francis & Co.         |
| <b>Dyestuffs—</b>       |              |                             |
| <b>Annatto</b>          |              |                             |
| Bordeaux,               | 10 cks.      | R. J. Francis & Co.         |
| <b>Argols</b>           |              |                             |
| Oporto,                 | 47 cks.      | German Bank of London       |
| <b>Cutch</b>            |              |                             |
| Rangoon,                | 2,380 bxs.   |                             |
| <b>Divi Divi</b>        |              |                             |
| Hamburg,                | 159 bgs.     |                             |
| <b>Extracts</b>         |              |                             |
| New York,               | 34 cks.      | E. M. Schweik               |
| <b>Philadelphia,</b>    |              |                             |
| Tampico,                | 100 bxs.     |                             |
| Baltimore,              | 3,386 ps.    |                             |
| "                       | 5,804        | W. H. Thompson & Co.        |
| <b>Logwood</b>          |              |                             |
| "                       | 41 t.        | D. Midgley & Son            |
| <b>Orchella</b>         |              |                             |
| Guayaquil,              | 174 bls.     |                             |
| <b>Shumac</b>           |              |                             |
| Bordeaux,               | 170 bls.     | R. J. Francis & Co.         |
| <b>Glucose—</b>         |              |                             |
| New York,               | 100 brls.    | T. M. Duche & Sons          |
| "                       | 100          |                             |
| Boston,                 | 550          |                             |
| <b>Glue—</b>            |              |                             |
| Rouen,                  | 17 cs.       | Co-op. W'sale Society, Ltd. |
| <b>Limestone—</b>       |              |                             |
| Antwerp,                | 1 cs. 8 cts. |                             |
| <b>Manganese—</b>       |              |                             |
| Hamburg,                | 3 cs.        |                             |
| <b>Manure—</b>          |              |                             |
| Philadelphia,           | 93 bgs.      |                             |
| <b>Naphtha—</b>         |              |                             |
| Philadelphia,           | 5,250 brls.  |                             |
| <b>Oxalic Acid—</b>     |              |                             |
| Rotterdam,              | 8 cks.       |                             |
| <b>Paint—</b>           |              |                             |
| Boston,                 | 115 cs.      | M. Nicol & Co.              |
| <b>Paraffin Scale—</b>  |              |                             |
| Baltimore,              | 100 brls.    |                             |
| New York,               | 1,694        | Thompson & Bedford          |
| Rangoon,                | 352 bxs.     |                             |
| <b>Phosphate—</b>       |              |                             |
| Terneuzen,              | 650 t.       | Phosphate Guano Co.         |
| <b>Phosphate Rock—</b>  |              |                             |
| Fernandina,             | 1,980 t.     |                             |
| <b>Phosphoric Acid—</b> |              |                             |
| Bremen,                 | 15 cks.      |                             |

|                        |                  |                             |
|------------------------|------------------|-----------------------------|
| <b>Potash—</b>         |                  |                             |
| Dunkirk,               | 1 ck. 10 brls.   |                             |
| Rouen,                 | 102              | Co-op. W'sale Society, Ltd. |
| <b>Pyrites—</b>        |                  |                             |
| Gothenburg,            | 40 bgs.          | J. S. Sellers               |
| Huelva,                | 1,569            | Thames S. T. & L. Co.       |
| "                      | 7,671            | Matheson & Co.              |
| <b>Saltpetre—</b>      |                  |                             |
| Antwerp,               | 75 cks.          |                             |
| Hamburg,               | 4                | 165 kgs.                    |
| <b>Soap—</b>           |                  |                             |
| Newport News,          | 170 bdl.         |                             |
| Copenhagen,            | 2 cs.            | Lever Brs., Ltd.            |
| <b>Soapstone—</b>      |                  |                             |
| Bordeaux,              | 300 bgs.         |                             |
| <b>Sodium Nitrate—</b> |                  |                             |
| Pisagua,               | 16,581 bgs.      |                             |
| Iquique,               | 15,715           |                             |
| Antofagasta,           | 917.             | F. Huth & Co.               |
| <b>Starch—</b>         |                  |                             |
| Rotterdam,             | 184 cs.          |                             |
| Antwerp,               | 20               |                             |
| Baltimore,             | 550 sks.         |                             |
| New York,              | 200 bgs.         |                             |
| Hamburg,               | 76               |                             |
| <b>Stearine—</b>       |                  |                             |
| Antwerp,               | 46 bgs.          |                             |
| <b>Tallow—</b>         |                  |                             |
| New York,              | 100 hds.         |                             |
| <b>Tartar</b>          |                  |                             |
| Bordeaux,              | 3 cks.           |                             |
| <b>Tartaric Acid—</b>  |                  |                             |
| Rotterdam,             | 8 cks.           |                             |
| Hamburg,               | 4                |                             |
| <b>Ultramarine—</b>    |                  |                             |
| Rotterdam,             | 1 cs.            |                             |
| <b>Varnish—</b>        |                  |                             |
| Hamburg,               | 8 pks.           |                             |
| <b>White Lead—</b>     |                  |                             |
| Rotterdam,             | 115 cks.         |                             |
| Antwerp,               | 12 brls. 12 cks. |                             |
| <b>Wood Pulp—</b>      |                  |                             |
| Rotterdam,             | 22 bls.          |                             |
| Gothenburg,            | 170              |                             |
| <b>Zinc Oxide—</b>     |                  |                             |
| Antwerp,               | 77 brls.         |                             |
| <b>Zinc White—</b>     |                  |                             |
| Rotterdam,             | 106 cks.         |                             |

## MANCHESTER.

Week ending February 8th.

|                                          |                       |                          |
|------------------------------------------|-----------------------|--------------------------|
| <b>Acetate of Lime—</b>                  |                       |                          |
| New York,                                | 926 bgs.              | J. W. Coulston & Co.     |
| <b>"</b>                                 |                       |                          |
| "                                        | 1,455                 |                          |
| <b>Acetic Acid—</b>                      |                       |                          |
| Rotterdam,                               | 16 blns.              |                          |
| <b>Albumen—</b>                          |                       |                          |
| Hamburg,                                 | 10 cs.                |                          |
| <b>Alizarine—</b>                        |                       |                          |
| Rotterdam,                               | 34 cks.               |                          |
| <b>Barytes—</b>                          |                       |                          |
| Antwerp,                                 | 100 bgs.              |                          |
| <b>Chemicals (otherwise undescribed)</b> |                       |                          |
| New York,                                | 21 cks.               |                          |
| <b>Colours—</b>                          |                       |                          |
| Rotterdam,                               | 21 cks. 2 brls. 1 bx. |                          |
| "                                        | 41 cs. 60 bgs.        |                          |
| Hamburg,                                 | 3                     |                          |
| Antwerp,                                 | 2                     | J. T. Fletcher & Co.     |
| "                                        | 10 cs.                |                          |
| <b>Farina—</b>                           |                       |                          |
| Stettin,                                 | 750 bgs.              |                          |
| Hamburg,                                 | 92                    |                          |
| <b>Glucose—</b>                          |                       |                          |
| New York,                                | 200 brls.             | T. M. Duche & Sons       |
| "                                        | 60                    |                          |
| <b>Glue—</b>                             |                       |                          |
| Rotterdam,                               | 100 bgs.              |                          |
| Hamburg,                                 | 10                    |                          |
| <b>Litharge—</b>                         |                       |                          |
| Rotterdam,                               | 15 cks.               |                          |
| <b>Logwood—</b>                          |                       |                          |
| Montego Bay,                             | 239 t.                | 8 c. E. D. Sassoon & Co. |
| <b>Paraffin Wax—</b>                     |                       |                          |
| New York,                                | 30 brls.              | Standard O Co.           |
| <b>Phosphate—</b>                        |                       |                          |
| Ghent,                                   | 1,000 bgs.            |                          |
| <b>Saltpetre—</b>                        |                       |                          |
| Hamburg,                                 | 2 brls.               |                          |
| <b>Starch—</b>                           |                       |                          |
| Rotterdam,                               | 228 cs.               |                          |
| New York,                                | 200 bgs.              |                          |
| Antwer                                   |                       |                          |



**Tartaric Acid**—  
Rotterdam, 10 kgs.

**Ultramarine**—  
Hamburg, 2 cks.

**White Lead**—  
Rotterdam, 16 cks.

**Wood Pulp**—  
Rotterdam, 154 bls.  
Copenhagen, 120  
Ronneby, 3 974  
Skeitt, 3 275  
Borregaard, 2,640  
Porsgrund, 216 (Thro' Barrow.)

**Zinc Oxide**—  
New York, 100 brls.  
Antwerp, 20

**Zinc White**—  
Rotterdam, 10 cks.

### HULL.

*Week ending February 8th.*

**Acetic Acid**—  
Antwerp, 40 pks. Bailey & Leatham

**Acid**—  
Rotterdam, 20 blus. W. & C. L. Ringrose

**Albumen**—  
Hamburg, 12 cs. Wilson, Sons, & Co., Ltd.

**Alum**—  
Rotterdam, 16 cks. W. & C. L. Ringrose

**Aniline Colours**—  
Rotterdam, 1 kg. Hutchinson & Son

**Barytes**—  
Bremen, 39 cks. G Holmes & Co.  
Rotterdam, 45 W. & C. L. Ringrose  
Antwerp, 33 100 bgs. Bailey & Leatham

**Bone Meal**—  
Bombay, 2,000 bgs.  
Kurrachee, 3,000

**Castor Oil**—  
Hamburg, 1 cs. Wilson, Sons, & Co., Ltd.

**Chemicals (otherwise undescribed)**  
Hamburg, 1 cs. Bailey & Leatham  
Bremen, 3 pks. Veltmann & Co.  
Hamburg, 1 ck. Lofthouse & Saltmer  
New York, 2 dms. Wilson, Sons, & Co., Ltd.  
Danzig, 35 cks. W. & C. L. Ringrose  
Antwerp, 6 brls. Wilson, Sons, & Co., Ltd.

**Colours**—  
Hamburg, 4 cs. Bailey & Leatham  
" 2 cks. Wilson, Sons, & Co., Ltd.

Ghent, 1 ck. Wilson, Sons, & Co., Ltd.

Rotterdam, 7 Hutchinson & Son

" 4 cs. Wilson, Sons, & Co., Ltd.

" 17 bxs. 10 pks.

Antwerp, 35 brls. W. & C. L. Ringrose  
46 pks. Wilson, Sons, & Co., Ltd.

**Cream of Tartar**—  
Rotterdam, 2 cks. Hutchinson & Son

**Creosote Salt**—  
Hamburg, 1 ck. Wilson, Sons, & Co., Ltd.

**Dextrine**—  
Stettin, 200 bgs. Wilson, Sons, & Co., Ltd.

**Dyestuffs**—  
Alizarine  
Rotterdam, 34 cks. 31 brls. W. & C. L. Ringrose  
1 bxs.

**Madder**—  
Rotterdam, 1 ck. Hutchinson & Son

**Myrabolams**  
Bombay, 3,449 bgs.

**Sumac**  
Palermo, 850 bgs. Wilson, Sons, & Co., Ltd.

1,000

**Valonia**  
Trieste, 190 bgs. Wilson, Sons, & Co., Ltd.

Maites, Smyrna, 1 133 t. 267

**Farina**—  
Amsterdam, 500 bgs. Wilson, Sons, & Co., Ltd.

Stettin, 750  
Harlingen, 50  
Hamburg, 100  
Ghent, 209 cs.

**Glucose**—  
Stettin, 50 cks. Wilson, Sons, & Co., Ltd.

New York, 700 brls. 238 bgs.

**Glue**—  
Dunkirk, 193 pks. Wilson, Sons, & Co., Ltd.

Rotterdam, 2 cs. Hutchinson & Son

Antwerp, 2 cks. W. & C. L. Ringrose

Rouen, 10 40 bgs. Rawson & Robinson

**Guanos**—  
Hamburg, 200 bgs. Wilson, Sons, & Co., Ltd.

**Minium**—  
Rotterdam, 21 cks. W. & C. L. Ringrose

**Oxalic Acid**—  
Rotterdam, 3 cks. Hutchinson & Son

**Phosphate**—  
Dunkirk, 750 bgs.  
Harlingen, 13  
Ghent, 200 t. Wilson, Sons, & Co., Ltd.

**Pitch**—  
Amsterdam, 21 cks. Hutchinson & Son

**Potash**—  
Dunkirk, 36 cks. 87 pks. Wilson, Sons, & Co., Ltd.

Rotterdam, 20 W. & C. L. Ringrose

Antwerp, 10 dms. Wilson, Sons, & Co., Ltd.

**Pumice Stone**—  
Messina, 60 bgs. 51 pks. Wilson, Sons, & Co., Ltd.

**Rosin**—  
Hamburg, 2 cs. Wilson, Sons, & Co., Ltd.

**Saltpetre**—  
Antwerp, 135 bgs. Wilson, Sons, & Co., Ltd.

**Soap**—  
Bari, 21 cs. Wilson, Sons, & Co., Ltd.

Molfetta, 254 " "

**Soda**—  
Antwerp, 10 bgs. Wilson, Sons, & Co., Ltd.

**Starch**—  
Dunkirk, 200 cs. Wilson, Sons, & Co., Ltd.

" 200 " "

Bremen, 1,684 Veltmann & Co.

**Stearine**—  
Antwerp, 49 bgs. Wilson, Sons, & Co., Ltd.

**Sulphur**—  
Catania, 56 pks. Wilson, Sons, & Co., Ltd.

" 1,344

**Tallow**—  
Dunkirk, 10 cks. Wilson, Sons, & Co., Ltd.

New York, 250 tcs. "

**Tartar**—  
Bordeaux, 5 cks. Rawson & Robinson

**Tartaric Acid**—  
Rotterdam, 4 cks. Hutchinson & Son

" 2 W. & C. L. Ringrose

**Treacle**—  
Hamburg, 3 cks. Wilson, Sons, & Co., Ltd.

Boston, 225 brls. "

New York, 45 " "

**Ultramarine**—  
Hamburg, 4 cks.

Bremen, 28

**Yarnish**—  
Antwerp, 3 cks. T. F. Chambers & Co.

**Waste Salt**—  
Hamburg, 34 cks. Wilson, Sons, & Co., Ltd.

**White Lead**—  
Antwerp, 134 cks. Bailey & Leatham

Rotterdam, 23 Hutchinson & Son

**Wood Pulp**—  
Hamburg, 572 bls. Bailey & Leatham

Christiania, 1,032 pks. Wilson, Sons, & Co., Ltd.

### GLASGOW.

*Week ending February 13th.*

**Albumen**—  
Antwerp, 3 cks.

**Alumina Sulphate**—  
Rotterdam, 30 cks. J. Rankine & Son

**Arachide Oil**—  
Rotterdam, 1 ck. J. Rankine & Son

**Barium Chlorate**—  
Rotterdam, 4 cks. J. Rankine & Son

**Barium Sulphate**—  
Antwerp, 680 bgs.

**Caoutchouc**—  
Hamburg, 1 cs.

**Colours**—  
Rotterdam, 15 brls. 3 lxs. J. Rankine & Son

Antwerp, 5 cs. 31 pks.

Hamburg, 3 1 ck.

**Dyestuffs**—  
Alizarine  
Rotterdam, 15 brls. J. Rankine & Son

" 74 pks.

**Argols**  
Bordeaux, 42 cks.

**Infusorial Earth**—  
Hamburg, 56 bgs.

**Paraffin Wax**—  
Baltimore, 110 brls.

**Plumbago**—  
Hamburg, 5 brls.  
Colombo, 1 pk.

**Potash**—  
Hamburg, 32 dms.

**Potassium Nitrate**—  
Hamburg, 68 cks.

**Pyrites**—  
Huelva, 2,077 t. Tharsis Co.

**Rosin**—  
Baltimore, 251 brls.

**Soap**—  
Newport News, 670 brls. W. T. Geddes

" 170

**Tartar**—  
Bordeaux, 5 cks.

**Ultramarine**—  
Rotterdam, 2 cs. J. Rankine & Son

**Waste Salt**—  
Hamburg, 50 bgs.

**White Lead**—  
Rotterdam, 29 cks. J. Rankine & Son

**Wood Pulp**—  
Hamburg, 500 bls.  
Christiania, 1,760

**Zinc Oxide**—  
Antwerp, 15 cks.

**Zinc Sulphite**—  
Rotterdam, 5 brls. J. Rankine & Son

**Zinc White**—  
Rotterdam, 25 cks. J. Rankine & Son

### TYNE.

*Week ending February 8th.*

**Alum Earth**—  
Hamburg, 17 cks. Tyne S. S. Co.

**Barytes**—  
Antwerp, 100 bgs. 32 brls. Tyne S. S. Co.

**Castor Oil**—  
Antwerp, 28 brls. Tyne S. S. Co.

**Colours**—  
Hamburg, 10 cks. Tyne S. S. Co.

Antwerp, 3 1 brl. "

Rotterdam, 3 1 brl. "

**Glucose**—  
Hamburg, 13 cks. Tyne S. S. Co.

**Limestone**—  
Antwerp, 8 c. Tyne S. S. Co.

**Pyrites**—  
Huelva, 1,713 t.

**Soap**—  
Rotterdam, 2 cs. Tyne S. S. Co.

**Starch**—  
Rotterdam, 69 cs. Tyne S. S. Co.

**Tartaric Acid**—  
Rotterdam, 4 cks. Tyne S. S. Co.

**Ultramarine**—  
Rotterdam, 1 ck. Tyne S. S. Co.

**Yarnish**—  
Antwerp, 6 kgs. Tyne S. S. Co.

**White Lead**—  
Antwerp, 10 cks. Tyne S. S. Co.

**Wood Pulp**—  
Gothenburg, 17 bls. 122 pks.

**Zinc Oxide**—  
Antwerp, 25 brls. Tyne S. S. Co.

**Zinc Sulphate**—  
Gothenburg, 20 bxs.

### GOOLE.

*Week ending February 5th.*

**Albumen**—  
Calais, 3 cs.  
Hamburg, 2 cks.

**Alizarine**—  
Rotterdam, 26 cks.

**Alkali**—  
Calais, 16 cks.

**Alum**—  
Rotterdam, 60 bgs.

**Caoutchouc**—  
Boulogne, 1 cs.

**Colours**—  
Ghent, 6 cks. 2 cs.  
Hamburg, 24 3

**Dyestuffs (otherwise undescribed)**  
Rotterdam, 251 cks. 39 cs.

Boulogne, 13 5 50 pks.

**Farina**—  
Delfsylvl, 200 bgs.

**Glucose**—  
Dunkirk, 100 bgs.  
Hamburg, 55 cks.

**Logwood**—  
Jamaica, 1,185 t.  
Belize, 925

**Madder**—  
Rotterdam, 12 cks.

**Potash**—  
Calais, 31 dms.  
Dunkirk, 6 cks. 40

Rotterdam, 18 8

**Saltpetre**—  
Hamburg, 85 bgs.  
Hamburg, 31 cks. 40 kgs.

**Soap**—  
Boulogne, 9 cs.

**Sodium Silicate**—  
Rotterdam, 1 ck.

**Yarnish**—  
Boulogne, 10 cks.

**Waste Salt**—  
Hamburg, 1,179 cks.

**Wood Pulp**—  
Rotterdam, 19 pks.

### GRIMSBY.

*Week ending February 8th.*

**Caoutchouc**—  
Hamburg, 46 cs.  
Rotterdam, 5 pks.

**Chemicals (otherwise undescribed)**  
Hamburg, 5 cks. 3 cs.

**Colours**—  
Rotterdam, 3 cks.

Hamburg, 6 44 pks.

Antwerp, 18 cs.

**Dyes**—  
Antwerp, 74 pks.  
Hamburg, 69

**White Lead**—  
Hamburg, 118 cks.



# EXPORTS OF CHEMICAL PRODUCTS OF THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

**LONDON.**

Week ending February 12th.

|                                          |       |  |
|------------------------------------------|-------|--|
| <b>Alkali—</b>                           |       |  |
| Cape Town, 9 c.                          | £7    |  |
| <b>Ammonia (Liquid)—</b>                 |       |  |
| La Libertad, 4 c.                        | £13   |  |
| <b>Ammonium Carbonate—</b>               |       |  |
| Sydney, 15 c.                            | £28   |  |
| Nelson, 4 c.                             | 0     |  |
| Yokohama, 4 t. 10                        | 143   |  |
| <b>Ammonium Chloride—</b>                |       |  |
| Fremantle, 12 c.                         | £20   |  |
| Cologne, 16 cks.                         | 245   |  |
| M. Video, 2                              | 4     |  |
| Sydney, 11                               | 27    |  |
| <b>Ammonium Nitrate—</b>                 |       |  |
| Bombay, 4 c.                             | £11   |  |
| Bilbao, 35 cks.                          | 156   |  |
| <b>Ammonium Sulphate—</b>                |       |  |
| Rotterdam, 50 t.                         | £450  |  |
| Demerara, 10 14 c.                       | 105   |  |
| Bremen, 50                               | 420   |  |
| Dunkirk, 150                             | 1,175 |  |
| Canaria, 8                               | 37    |  |
| Tonmay, 50                               | 450   |  |
| Ghent, 270                               | 2,430 |  |
| Antwerp, 35                              | 315   |  |
| <b>Anhydrous Ammonia—</b>                |       |  |
| B. Ayres, 10 c.                          | £220  |  |
| <b>Arsenic—</b>                          |       |  |
| Higo, 1 t.                               | £19   |  |
| Brahane, 20 dms.                         | 18    |  |
| <b>Barium Chloride—</b>                  |       |  |
| New York, 5 c.                           | £93   |  |
| Constantinople, 6                        | 30    |  |
| <b>Barium Nitrate—</b>                   |       |  |
| Constantinople, 10 c.                    | £12   |  |
| <b>Barytes—</b>                          |       |  |
| New York, 2 t.                           | £36   |  |
| <b>Borax—</b>                            |       |  |
| Cartagena, 15 c.                         | £11   |  |
| Frib, 3                                  | 5     |  |
| <b>Carbolic Acid—</b>                    |       |  |
| Calcutta, 25 c.                          | £10   |  |
| Yokohama, 5 t.                           | 115   |  |
| <b>Carbonic Acid Gas—</b>                |       |  |
| Rangoon, 1 t. 6 c.                       | £70   |  |
| Wellington, 2 4                          | 84    |  |
| <b>Caustic Soda—</b>                     |       |  |
| Natal, 2 t. 9 c.                         | £59   |  |
| E. London, 14                            | 27    |  |
| Melbourne, 11 c.                         | 38    |  |
| Pl. Elizabeth, 6                         | 10    |  |
| <b>Chemicals (otherwise undescribed)</b> |       |  |
| Demerara, 7 c.                           | £14   |  |
| Wellington, 4 pks.                       | 99    |  |
| Fremantle, 4 c.                          | 28    |  |
| N. Orleans, 8 cks.                       | 45    |  |
| Singapore, 2                             | 10    |  |
| Perth, 15                                | 84    |  |
| Calcutta, 5                              | 23    |  |
| Madras, 12 pks.                          | 5     |  |
| Karachi, 12 pks.                         | 17    |  |
| <b>Citric Acid—</b>                      |       |  |
| Bombay, 1 c.                             | £5    |  |
| Serim, 2 cks.                            | 76    |  |
| Rotterdam, 21 kgs.                       | 138   |  |
| Copenhagen, 10                           | 65    |  |
| Alexandria, 2                            | 13    |  |
| Kurrachee, 4 c.                          | 32    |  |
| Calcutta, 1                              | 4     |  |
| Yokohama, 10                             | 63    |  |
| <b>Coal Products—</b>                    |       |  |
| Aniline Dyes                             |       |  |
| Melbourne, 2 c.                          | £13   |  |
| Calcutta, 1                              | 85    |  |
| <b>Aniline Oil</b>                       |       |  |
| Philadelphia, 12 dms.                    | £450  |  |
| New York, 14 dms.                        | 450   |  |
| <b>Aniline Salts</b>                     |       |  |
| New York, 20 cks.                        | £550  |  |
| <b>Benzol</b>                            |       |  |
| Rotterdam, 50 cks. 18 pns.               | £461  |  |
| Cologne, 50                              | 344   |  |
| <b>Carbolic Acid</b>                     |       |  |
| Rotterdam, 40 dms.                       | £185  |  |
| Calcutta, 25                             | 10    |  |
| <b>Creosote Salt</b>                     |       |  |
| Philadelphia, 50 t.                      | £80   |  |
| <b>Naphthaline</b>                       |       |  |
| Calcutta, 125 cks.                       | £157  |  |
| Adelaide, 7                              |       |  |

|                                          |             |    |
|------------------------------------------|-------------|----|
| New York, 132                            | 132         |    |
| Baltimore, 88 c.                         | 84          |    |
| <b>Pitch</b>                             |             |    |
| St. Malo, 420 t.                         | £798        |    |
| Havre, 30 cks.                           | 100         |    |
| Dunkirk, 1,745                           | 3,490       |    |
| Boston, 350 brls.                        | 180         |    |
| Dieppe, 475                              | 1,022       |    |
| Algoa Bay, 15                            | 5           |    |
| Antwerp, 842                             | 1,684       |    |
| New York, 200                            | 93          |    |
| <b>Tar</b>                               |             |    |
| Calcutta, 200 brls.                      | £110        |    |
| Batoum, 10 dms.                          | 30          |    |
| Natal, 800 dms.                          | 81          |    |
| Brisbane, 6                              | 5           |    |
| <b>Tar Oil</b>                           |             |    |
| Philadelphia, 48 cks.                    | £175        |    |
| Marseilles, 1                            | 7           |    |
| <b>Coal Products (otherwise undes.)—</b> |             |    |
| Melbourne, 7 cks.                        | £23         |    |
| <b>Cobalt Oxide—</b>                     |             |    |
| Higo, 2 c.                               | £66         |    |
| <b>Copper Arseniate—</b>                 |             |    |
| Constantinople, 1 c.                     | £3          |    |
| <b>Copper Sulphate—</b>                  |             |    |
| Naples, 8 t. 15 c.                       | £15         |    |
| M. Video, 1 ck.                          | 4           |    |
| Batoum, 10                               | 175         |    |
| <b>Copperas—</b>                         |             |    |
| Cologne, 2 c.                            | £12         |    |
| <b>Cream of Tartar—</b>                  |             |    |
| Christchurch, 5 c.                       | £24         |    |
| Wellington, 15                           | 80          |    |
| Sydney, 1 t. 10                          | 142         |    |
| Fremantle, 10                            | 51          |    |
| Adelaide, 5                              | 470         |    |
| <b>Cyanide—</b>                          |             |    |
| Madras, 3 c.                             | £25         |    |
| <b>Disinfectants—</b>                    |             |    |
| Alexandria, 11 c.                        | £21         |    |
| Melbourne, 40 c.                         | 100         |    |
| Bombay, 13 t. 4 c.                       | 65 dms. 169 |    |
| Sydney, 205 pks.                         | 5 c.        | 54 |
| <b>Guano—</b>                            |             |    |
| Trinidad, 115 t.                         | £920        |    |
| <b>Manures—</b>                          |             |    |
| Cape Town, 61 t. 1 c.                    | £185        |    |
| Rotterdam, 2                             | 10          |    |
| Genoa, 100                               | 200         |    |
| Demerara, 50                             | 485         |    |
| E. London, 21 8                          | 132         |    |
| Rochefort, 650                           | 2,120       |    |
| Rouen, 40                                | 220         |    |
| Malaga, 91 5                             | 635         |    |
| Bordeaux, 92                             | 390         |    |
| Canaria, 11                              | 56          |    |
| Havre, 25                                | 80          |    |
| Cherbourg, 160                           | 567         |    |
| Guernsey, 10                             | 12          |    |
| <b>Muriatic Acid—</b>                    |             |    |
| Shanghai, 10 c.                          | £10         |    |
| <b>Nitric Acid—</b>                      |             |    |
| Shanghai, 10 c.                          | £14         |    |
| Jersey, 20 carboys                       | 40          |    |
| <b>Oxalic Acid—</b>                      |             |    |
| Yokohama, 10 c.                          | £17         |    |
| <b>Phosphorus—</b>                       |             |    |
| Brisbane, 2 c.                           | £19         |    |
| Alexandria, 12 c.                        | 130         |    |
| <b>Potashes—</b>                         |             |    |
| Toronto, 3 c.                            | £20         |    |
| Brisbane, 5 c.                           | 10          |    |
| M. Video, 1 ck. 18                       | 27          |    |
| <b>Potassium Chlorate—</b>               |             |    |
| Calcutta, 1 t. 5 c. 10 kgs.              | £78         |    |
| Constantinople, 1 19                     | 96          |    |
| <b>Salicylic Acid—</b>                   |             |    |
| New York, 12 c.                          | £35         |    |
| <b>Saltpetre—</b>                        |             |    |
| Santos, 2 t. 9 c.                        | £52         |    |
| Brisbane, 1 15                           | 41          |    |
| Oporto, 3 14                             | 75          |    |
| Melbourne, 5                             | 120         |    |
| Rio de Janeiro, 4 14                     | 121         |    |
| <b>Sheep Dip—</b>                        |             |    |
| Algoa Bay, 2 t. 14 c.                    | £125        |    |
| B. Ayres, 26 6                           | 910         |    |
| Jamaica, 1                               | 10          |    |
| E. London, 11 1                          | 1 ck. 407   |    |
| Melbourne, 10                            | 17          |    |
| <b>Silver Nitrate—</b>                   |             |    |
| Bombay, 1 c.                             | £19         |    |

**Soda—**

|                             |     |  |
|-----------------------------|-----|--|
| Cape Town, 2 t.             | £5  |  |
| <b>Soda Crystals—</b>       |     |  |
| Cape Town, 9 t.             | £28 |  |
| <b>Sodium Bicarbonate—</b>  |     |  |
| Brisbane, 15 c.             | £6  |  |
| Fremantle, 7                | 5   |  |
| <b>Sodium Carbonate—</b>    |     |  |
| Fremantle, 10 c.            | £5  |  |
| Natal, 5                    | 4   |  |
| <b>Sodium Oxalate—</b>      |     |  |
| Constantinople, 1 c.        | £4  |  |
| New York, 1                 | 4   |  |
| <b>Sodium Sulphate—</b>     |     |  |
| N. Zealand, 7 c.            | £1  |  |
| <b>Strontium Carbonate—</b> |     |  |
| Constantinople, 1 c.        | £2  |  |
| New York, 5                 | 8   |  |
| <b>Strontium Nitrate—</b>   |     |  |
| Calcutta, 2 t. 10 c.        | £66 |  |
| Constantinople, 10          | 17  |  |
| New York, 13 12             | 333 |  |
| <b>Sulphur—</b>             |     |  |
| Pl. Elizabeth, 1 t. 11 c.   | £12 |  |
| Brisbane, 2                 | 10  |  |
| <b>Sulphuric Acid—</b>      |     |  |
| Bombay, 1 t.                | £20 |  |
| <b>Tartaric Acid—</b>       |     |  |
| Durban, 3 c.                | £21 |  |
| Wellington, 30 kgs.         | 186 |  |
| Sydney, 1 t.                | 118 |  |
| Brisbane, 10                | 64  |  |
| Fremantle, 1                | 10  |  |
| E. London, 1                | 6   |  |
| Nelson, 3                   | 37  |  |
| Calcutta, 1                 | 5   |  |
| <b>Zinc Carbonate—</b>      |     |  |
| New York, 9 c.              | £23 |  |

**LIVERPOOL.**

Week ending February 12th.

|                               |           |  |
|-------------------------------|-----------|--|
| <b>Alum—</b>                  |           |  |
| Alexandria, 1 ck.             | £7        |  |
| Melbourne, 2 t.               | 10        |  |
| Galatz, 3 5 c.                | 16        |  |
| Calcutta, 29 1 3 q.           | 146       |  |
| B. Ayres, 1 10 1              | 7         |  |
| <b>Alumina Sulphate—</b>      |           |  |
| Portland, M., 9 t. 10 c. 2 q. | £45       |  |
| <b>Ammonium Carbonate—</b>    |           |  |
| Odessa, 1 t.                  | £34       |  |
| Bordeaux, 1 3 c.              | 34        |  |
| Seville, 18                   | 31        |  |
| Genoa, 1 5                    | 43        |  |
| <b>Ammonium Chloride—</b>     |           |  |
| Trieste, 1 t.                 | £36       |  |
| Calcutta, 1 4 c.              | 43        |  |
| Piraeus, 3                    | 0         |  |
| Samsoun, 10 cks.              | 45        |  |
| Alexandria, 2 10              | 94        |  |
| Christiania, 9                | 2 q. 40   |  |
| Galatz, 5                     | 9         |  |
| Braila, 1 9                   | 35        |  |
| Leghorn, 10                   | 19        |  |
| Yokohama, 10                  | 13        |  |
| Syria, 13                     | 24        |  |
| San Juan, 6                   | 10        |  |
| Antwerp, 2 12 3               | 66        |  |
| Melbourne, 1 6                | 32        |  |
| Kurrachee, 15                 | 26        |  |
| <b>Ammonium Sulphate—</b>     |           |  |
| Gd. Canary, 23 t. 14 c.       | 1 q. £206 |  |
| Las Palmas, 42 7              | 253       |  |
| Barcelona, 24 17              | 303       |  |
| Valencia, 34 19               | 208       |  |
| Cullera, 194 13               | 4 1,548   |  |
| Bordeaux, 13 1                | 8 25      |  |
| Cartagena Spn., 10            | 5 1 87    |  |
| Tarragona, 12 2               | 1 105     |  |
| Ghent, 159 12                 | 1,330     |  |
| <b>Barytes—</b>               |           |  |
| Constantinople, 25 cks.       |           |  |
| <b>Bleaching Powder—</b>      |           |  |
| Alexandria, 3 cks.            |           |  |
| Baltimore, 319                | 26 c.     |  |
| Bombay, 983                   | 125       |  |
| Calcutta, 125                 |           |  |

|                          |                  |  |
|--------------------------|------------------|--|
| Genoa, 45                |                  |  |
| Ghent, 10                |                  |  |
| Konigsberg, 20           |                  |  |
| Melbourne, 4             |                  |  |
| Naples, 31               |                  |  |
| Newport News, 136        |                  |  |
| New York, 692            |                  |  |
| Passages, 45             |                  |  |
| Philadelphia, 10         |                  |  |
| Portland, M., 80         |                  |  |
| St. John, N.B., 18       |                  |  |
| Seville, 27              |                  |  |
| Tampico, 68 brls.        |                  |  |
| Venice, 19               |                  |  |
| Vigo, 19                 |                  |  |
| <b>Boracic Acid—</b>     |                  |  |
| Antwerp, 12 c. 3 q.      | £20              |  |
| Yokohama, 6 t.           | 3 156            |  |
| Hiogo, 3 3               | 78               |  |
| <b>Borax—</b>            |                  |  |
| Hamburg, 1 t. 8 c. 2 q.  | £2               |  |
| Antwerp, 15 1 3          | 303              |  |
| Genoa, 19 3              | 29               |  |
| Sydney, 7                | 134              |  |
| Ferrol, 11               | 31               |  |
| Calamata, 3              | 5                |  |
| Melbourne, 3 2           | 65               |  |
| Galatz, 6                | 5                |  |
| <b>Calcium—</b>          |                  |  |
| Fiume, 5 t. 4 c.         | £10              |  |
| Boston, 25 1             | 34               |  |
| <b>Calcium Chloride—</b> |                  |  |
| Adelaide, 5 c.           | £1               |  |
| <b>Carbolic Acid—</b>    |                  |  |
| New York, 13 cks.        | £77              |  |
| Adelaide, 3 c.           | 7                |  |
| Napier, N.Z., 1 3 q.     | 6                |  |
| Newport News, 12 t. 15   | 560              |  |
| Genoa, 1 19 3            | 113              |  |
| Hamburg, 9               | 470              |  |
| Rouen, 17 5              | 246              |  |
| Yokohama, 6 3            | 246              |  |
| Hiogo, 3 1 1             | 158              |  |
| <b>Caustic Potash—</b>   |                  |  |
| Vigo, 13 c.              | £16              |  |
| Portland, M., 2 t. 9     | 71               |  |
| <b>Caustic Soda—</b>     |                  |  |
| Alexandria, 18 dms.      |                  |  |
| Alicante, 40             |                  |  |
| Baltimore, 422           |                  |  |
| Barcelona, 430           |                  |  |
| Barri, 171               |                  |  |
| Bilbao, 118              |                  |  |
| Bombay, 131              |                  |  |
| Boston, 250              | 35 bxs. 75 brls. |  |
| Brisbane, 18             |                  |  |
| B. Ayres, 50             |                  |  |
| Corunna, 4               |                  |  |
| Dunedin, 9               |                  |  |
| E. London, 12 3 c.       |                  |  |
| Fiume, 30                |                  |  |
| Galatz, 414              |                  |  |
| Genoa, 317               |                  |  |
| Hamburg, 100             |                  |  |
| Ibrail, 15               |                  |  |
| Jaffa, 158               |                  |  |
| La Guayra, 22            |                  |  |
| Lisbon, 95               |                  |  |
| Malaga, 145              |                  |  |
| Marseilles, 20           |                  |  |
| Melbourne, 14            |                  |  |
| Messina, 50              |                  |  |
| Naples, 52               |                  |  |
| N. Orleans, 240          |                  |  |
| New York, 367            | 110 kgs. 60      |  |
| Oporto, 63               |                  |  |
| Palermo, 10              |                  |  |
| Penang, 10               |                  |  |
| Pernambuco, 25           |                  |  |
| Philadelphia, 100        |                  |  |
| Portland, 50             |                  |  |
| Porto Alegre, 50         |                  |  |
| Rangoon, 18              |                  |  |
| Rio de Janeiro, 7        |                  |  |
| Rio Grande do Sul, 50    |                  |  |
| Rotterdam, 133           | 63 cks.          |  |
| Santos, 30               |                  |  |
| Seville, 358             |                  |  |
| Tatcahuano, 50           |                  |  |
| Tampico, 25              |                  |  |
| Tarragona, 20            |                  |  |
| Vigo, 2                  |                  |  |
| Volo, 50                 | 60               |  |
| Yokohama, 180            |                  |  |



**Chemicals (otherwise undescrbed)**

|                   |       |      |       |
|-------------------|-------|------|-------|
| Curacao,          | 1 c.  | 2 q. | £1    |
| Gothenburg,       | 24    |      | 43    |
| Barcelona,        | 10    |      | 17    |
| Genoa,            | 10    |      | 17    |
| Marseilles,       | 5     |      | 8     |
| Odessa,           | 18 t. |      | 592   |
| Oporto,           | 10    |      | 18    |
| Rotterdam,        | 2     | 6    | 89    |
| Naples,           | 10    |      | 18    |
| Alexandria, 1 ck. | 3     |      | 117   |
| Cairo,            | 2     |      | 74    |
| Copenhagen,       | 5     |      | 9     |
| New York,         | 8     | 3    | 2 343 |

**China Clay—**

|                 |          |  |  |
|-----------------|----------|--|--|
| Bombay,         | 218 t.   |  |  |
| Boston,         | 941      |  |  |
| Calcutta,       | 64       |  |  |
| Corunna,        | 10 c.    |  |  |
| New York,       | 200 cks. |  |  |
| Philadelphia,   | 40       |  |  |
| Rio de Janeiro, | 25       |  |  |

**Citric Acid—**

|          |      |     |    |
|----------|------|-----|----|
| Seville, | 2 c. | £14 |    |
| Corunna, | 2    |     | 14 |

**Coal Products—**

|                     |           |        |  |
|---------------------|-----------|--------|--|
| <b>Allzarine</b>    |           |        |  |
| Portland,           | 12 cks.   |        |  |
| <b>Aniline Salt</b> |           |        |  |
| Alexandria,         | 12 cks.   |        |  |
| Bombay,             | 1         |        |  |
| <b>Pitch</b>        |           |        |  |
| Cette,              |           | £5,500 |  |
| <b>Tar</b>          |           |        |  |
| Philadelphia,       | 250 brls. |        |  |

**Coal Products (otherwise undes.)—**

|           |         |         |  |
|-----------|---------|---------|--|
| New York, | 40 cks. | 57 cks. |  |
| Yokohama, | 7       |         |  |

**Copper Sulphate—**

|              |      |       |       |
|--------------|------|-------|-------|
| Iran,        | 9 t. | 19 c. | £147  |
| Barcelona,   | 10   |       | 147   |
| Havre,       | 10   | 1 q.  | 8     |
| Bari,        | 67   | 11    | 1,041 |
| Cadiz,       | 10   |       | 8     |
| Santos,      | 19   | 3     | 16    |
| Marseilles,  | 5    | 2     | 75    |
| Galatz,      | 1    | 15    | 27    |
| Dunedin,     | 1    | 5     | 20    |
| Brindisi,    | 5    | 7     | 84    |
| Bordeaux,    | 23   | 3     | 371   |
| Genoa,       | 11   | 3     | 466   |
| Lisbon,      | 10   | 3     | 155   |
| Leghorn,     | 46   | 9     | 699   |
| Palermo,     | 4    | 19    | 74    |
| Catania,     | 13   | 2     | 201   |
| Oporto,      | 51   | 6     | 794   |
| Paris,       | 5    | 8     | 80    |
| Venice,      | 154  | 4     | 2,371 |
| Christiania, | 1    | 1     | 15    |
| Alexandria,  | 1    |       | 16    |
| Corunna,     | 2    |       | 32    |
| Seville,     | 12   | 19    | 5 212 |
| Rouen,       | 10   | 5     | 155   |
| Naples,      | 180  | 1     | 2,771 |

**Copperas—**

|             |      |      |    |
|-------------|------|------|----|
| Calcutta,   | 9 t. | £18  |    |
| Alexandria, | 5    | 8 c. | 10 |

**Cream of Tartar—**

|                    |      |    |  |
|--------------------|------|----|--|
| St. Thomas, W. I., | 1 c. | £5 |  |
|--------------------|------|----|--|

**Disinfectants—**

|               |      |    |    |
|---------------|------|----|----|
| Napier, N.Z., | 5 c. | £3 |    |
| Alexandria,   | 2 t. |    | 24 |

**Gelatine—**

|           |          |  |  |
|-----------|----------|--|--|
| New York, | 403 cks. |  |  |
|-----------|----------|--|--|

**Guano—**

|         |       |     |  |
|---------|-------|-----|--|
| Malaga, | 10 t. | £90 |  |
|---------|-------|-----|--|

**Iron Oxide—**

|        |      |       |         |
|--------|------|-------|---------|
| Gijon, | 1 t. | 13 c. | £10     |
| Paris, | 2    | 3     | 1 q. 20 |

**Lime—**

|        |      |       |    |
|--------|------|-------|----|
| Opobo, | 2 t. | 19 c. | £3 |
| Axim,  | 15   |       | 5  |

**Magnesium—**

|            |       |    |   |
|------------|-------|----|---|
| Singapore, | 10 c. | £6 |   |
| Manila,    | 6     |    | 4 |

**Magnesium Carbonate—**

|          |         |         |     |
|----------|---------|---------|-----|
| Tampico, | 30 cks. | 16 cks. | £84 |
|----------|---------|---------|-----|

**Magnesium Sulphate—**

|                    |          |  |  |
|--------------------|----------|--|--|
| Halifax,           | 100 bgs. |  |  |
| New York,          | 50 kgs.  |  |  |
| Portland, O.,      | 20 brls. |  |  |
| Rio de Janeiro,    | 200      |  |  |
| St. John's, Nfld., | 30       |  |  |
| Seville,           | 20       |  |  |

**Manure—**

|             |       |      |      |
|-------------|-------|------|------|
| Havre,      | 50 t. | 1 c. | £131 |
| Las Palmas, | 15    |      | 44   |

**Oxalic Acid—**

|            |      |      |       |
|------------|------|------|-------|
| Trieste,   | 1 t. | 2 c. | £31   |
| Venice,    | 13   | 2 q. | 24    |
| Oporto,    | 4    |      | 8     |
| Barcelona, | 5    | 8    | 3 152 |

**Paint—**

|                    |         |               |           |
|--------------------|---------|---------------|-----------|
| Boston,            | 3       | 4             | 101       |
| Amsterdam,         |         | 5 kgs. 6 dms. |           |
| Heyrout,           | 3 brls. |               |           |
| Bombay,            | 2 cks.  | 1 ck.         | 128       |
| B. Ayres,          | 11      |               |           |
| Calcutta,          |         | 95            |           |
| Cape Haitien,      | 1       |               |           |
| Cartagena,         | 3 cks.  | 13            |           |
| Gibraltar,         | 4       | 25            |           |
| Gd. Canary,        |         | 20            |           |
| Guayaquil,         | 100     |               |           |
| Havre,             | 1       |               |           |
| Iquique,           | 49      |               |           |
| Lisbon,            | 3       |               |           |
| Manzanillo,        | 2       |               |           |
| Maranham,          | 2       | 3             |           |
| M. Video,          | 36      |               |           |
| New York,          | 4       | 510           | 307 brls. |
| Old Calabar,       | 28      | 3 dms.        |           |
| Para,              | 6       |               |           |
| Penang,            | 7       |               |           |
| Pernambuco,        | 4       |               |           |
| Randers,           | 4       |               |           |
| Rangoon,           | 2 cks.  | 22 dms.       |           |
| Rio de Janeiro,    | 10      | 32            |           |
| St. John's, Nfld., |         | 2 cks.        |           |
| Salonica,          |         | 2 brls.       |           |
| Santos,            | 1       |               |           |
| Seville,           |         | 6             |           |
| Sierra Leone,      |         | 216 pks.      |           |
| Smyrna,            | 251     |               |           |
| Talcahuano,        |         | 22 dms.       |           |
| Teneriffe,         | 5       | 20            |           |
| Trieste,           |         | 167 pks.      |           |
| Valparaiso,        |         |               |           |
| Yokohama,          | 100     |               |           |

**Painters Colours—**

|               |         |                  |           |
|---------------|---------|------------------|-----------|
| Alexandria,   | 20 dms. | 95 kgs. 16 brls. |           |
| Bahia,        |         | 10               |           |
| Baltimore,    |         | 50               | 100       |
| Bombay,       | 100     | 4,091            | 349 cks.  |
| B. Ayres,     | 7 cks.  | 140              | 115 brls. |
| Corunna,      |         | 4                |           |
| Danzig,       |         | 200 bgs.         |           |
| Forcados,     |         | 12               |           |
| Galatz,       | 6       | 510              |           |
| Genoa,        | 7 pks.  | 4                |           |
| Gothenburg,   |         | 30 bgs.          |           |
| Hamburg,      |         | 300              |           |
| Havana,       | 3 cks.  |                  |           |
| La Libertad,  | 5       |                  |           |
| Las Palmas,   |         | 40               |           |
| Lisbon,       | 1       |                  |           |
| Manaos,       | 9       | 6                |           |
| Montreal,     | 4       |                  |           |
| Newport News, | 130     | 78 pks.          |           |

**Paraffin Wax—**

|             |         |  |  |
|-------------|---------|--|--|
| Patras,     | 57 bgs. |  |  |
| Pernambuco, | 10 cks. |  |  |
| Syria,      | 7       |  |  |

**Phosphorus—**

|            |      |      |      |
|------------|------|------|------|
| Higo,      | 4 t. | 7 c. | £870 |
| Vera Cruz, |      | 8    | 88   |

**Potassium Bichromate—**

|          |      |      |         |
|----------|------|------|---------|
| Volo,    |      | 7 c. | £16     |
| Bombay,  | 1 t. | 1    | 43      |
| Seville, | 1    | 10   | 1 q. 65 |

**Potassium Carbonate—**

|        |       |     |  |
|--------|-------|-----|--|
| Genoa, | 10 c. | £13 |  |
|--------|-------|-----|--|

**Potassium Chlorate—**

|               |        |       |     |
|---------------|--------|-------|-----|
| B. Ayres,     |        | 10 c. | £20 |
| M. Video,     | 5      |       | 196 |
| Genoa,        | 1      |       | 49  |
| Bari,         | 3      |       | 80  |
| Antwerp,      |        | 10    | 30  |
| Bremen,       |        | 15    | 30  |
| Tampico,      |        | 17    | 38  |
| Santos,       | 3      |       | 130 |
| Lisbon,       | 5 kgs. |       | 8   |
| Naples,       |        | 15    | 30  |
| Higo,         | 13 t.  | 14    | 526 |
| Rotterdam,    | 2      | 8     | 100 |
| Reval,        |        | 17    | 32  |
| Boston,       | 2      | 10    | 78  |
| San Juan,     | 2      |       | 80  |
| Konigsberg,   | 1      | 4     | 56  |
| Philadelphia, | 7      | 10    | 300 |
| New York,     | 21     | 5     | 778 |
| Copenhagen,   | 1      | 10    | 53  |

**Potassium Cyanide—**

|          |       |     |  |
|----------|-------|-----|--|
| Curacao, | 13 c. | £80 |  |
|----------|-------|-----|--|

**Potassium Silicate—**

|            |      |      |     |
|------------|------|------|-----|
| Amsterdam, | 1 t. | 5 c. | £10 |
|------------|------|------|-----|

**Salt—**

|              |       |       |  |
|--------------|-------|-------|--|
| Accra,       | 9 t.  | 12 c. |  |
| Algoa Bay,   | 8     |       |  |
| Antwerp,     | 210   |       |  |
| Barcelona,   | 600   |       |  |
| Benin,       | 5     |       |  |
| Boston,      | 90    |       |  |
| B. Ayres,    | 66    |       |  |
| Calcutta,    | 9,811 |       |  |
| Christiania, | 17    | 10    |  |
| Copenhagen,  | 530   |       |  |

|                |     |    |  |
|----------------|-----|----|--|
| Faroe Islands, | 165 |    |  |
| Gd. Bassa,     | 24  | 15 |  |
| Gd. Bassam,    | 50  |    |  |
| Hamburg,       | 1   | 7  |  |
| Monrovia,      | 23  | 15 |  |
| M. Video,      | 13  |    |  |
| New York,      | 5   |    |  |
| Para,          |     | 3  |  |
| Portland,      | 60  |    |  |
| Rangoon,       | 401 |    |  |
| Rotterdam,     | 108 |    |  |
| Savannah,      | 850 |    |  |
| Sydney,        | 5   |    |  |

**Salt Cake—**

|            |        |      |      |
|------------|--------|------|------|
| Baltimore, | 100 t. | 9 c. | £130 |
|------------|--------|------|------|

**Saltpetre—**

|             |      |       |         |
|-------------|------|-------|---------|
| Parahyba,   | 1 t. | £23   |         |
| Pernambuco, | 2    | 17 c. | 1 q. 80 |
| Maranham,   |      | 10    | 13      |
| Las Palmas, | 2    |       | 44      |
| Malta,      |      | 5     | 6       |
| Parahyba,   | 1    | 10    | 37      |

**Sheep Dip—**

|            |          |      |        |
|------------|----------|------|--------|
| M. Video,  | 288 dms. | £63  |        |
| Algoa Bay, |          | 3 c. | 8 q. 8 |

**Slag—**

|          |       |     |  |
|----------|-------|-----|--|
| Cordova, | 10 t. | £23 |  |
|----------|-------|-----|--|

**Soap—**

|                 |          |         |           |
|-----------------|----------|---------|-----------|
| Abonema,        | 350 bxs. |         |           |
| Accra,          | 140      |         |           |
| Addah,          | 50       |         |           |
| Alexandria,     | 21       | 40 cks. |           |
| Algoa Bay,      | 915      |         |           |
| Amboyna,        | 100      |         |           |
| Amsterdam,      | 340      |         |           |
| Antigua,        | 225      |         |           |
| Bakana,         | 200      |         |           |
| Barranquilla,   | 1,225    | 20 dms. | 18        |
| Bombay,         |          |         |           |
| Calcutta,       | 30       |         |           |
| Canaria,        | 465      |         |           |
| Cape Coast,     | 400      |         |           |
| Cape Town,      | 2,975    |         |           |
| Christiania,    | 175      | 200     |           |
| 15 bds.         |          |         |           |
| Constantinople, |          | 1       |           |
| Curacao,        | 50       |         |           |
| Dominica,       | 30       |         |           |
| E. London,      | 1,000    | 10      |           |
| Ferrol,         | 11       |         |           |
| Gibraltar,      | 210      |         |           |
| Gd. Canary,     | 22       |         |           |
| Guayaquil,      |          | 1       |           |
| Havre,          | 97       |         |           |
| Iquique,        | 10       |         |           |
| Hong Kong,      | 603      |         |           |
| La Plata,       |          | 6       |           |
| Las Palmas,     | 190      |         |           |
| Lima,           |          | 1       |           |
| Macassar,       | 500      |         |           |
| Madras,         |          | 15      |           |
| Mannas,         | 750      |         |           |
| Melilla,        | 20       |         |           |
| Monrovia,       |          | 139     |           |
| Mossel Bay,     | 500      | 5 bds.  |           |
| Montserrat,     | 30       |         |           |
| New York,       | 1,800    | 8 cks.  | 105 brls. |
| Old Calabar,    | 400      |         | 12 pks.   |
| Opobo,          | 3,300    |         |           |
| Palma,          | 225      |         |           |
| Para,           | 150      |         |           |
| Pireus,         |          | 1 cks.  |           |
| Pt. Elizabeth,  | 753      |         |           |
| Portland,       |          | 300     |           |
| Pt. Natal,      | 362      |         |           |
| Rangoon,        |          | 7       |           |
| Rotterdam,      | 75       |         |           |
| St. John, N.B., |          | 2       |           |
| St. Nazaire,    |          | 1       |           |
| St. Thomas,     |          | 4       |           |
| Salonica,       | 50       |         |           |
| San Juan,       | 100      |         |           |
| Shanghai,       | 8,766    |         |           |
| Singapore,      | 11       | 40 kgs. |           |
| Sierra Leone,   | 257      |         |           |
| Teneriffe,      | 500      |         |           |
| Trinidad,       | 250      |         |           |
| Warri,          | 50       |         |           |
| Zanzibar,       | 2,000    |         |           |

**Soda Ash—**

|              |          |          |           |
|--------------|----------|----------|-----------|
| Adelaide,    | 177 cks. |          |           |
| Antwerp,     |          | 467 bgs. |           |
| Baltimore,   | 102      | 2,565    |           |
| Barcelona,   | 40       |          |           |
| Boston,      | 43 tcs.  | 1,600    |           |
| Brisbane,    | 22       |          |           |
| B. Ayres,    | 15 bls.  | 15 kgs.  | 100 brls. |
| Calcutta,    | 100      | 100      |           |
| Christiania, | 38       |          |           |
| Copenhagen,  | 10       |          |           |
| Demerara,    | 8        |          |           |

**Soda Alkali—**

|            |          |  |  |
|------------|----------|--|--|
| Barcelona, | 35 brls. |  |  |
| Seville,   | 100      |  |  |

**Soda Ash—**

|              |          |          |           |
|--------------|----------|----------|-----------|
| Adelaide,    | 177 cks. |          |           |
| Antwerp,     |          | 467 bgs. |           |
| Baltimore,   | 102      | 2,565    |           |
| Barcelona,   | 40       |          |           |
| Boston,      | 43 tcs.  | 1,600    |           |
| Brisbane,    | 22       |          |           |
| B. Ayres,    | 15 bls.  | 15 kgs.  | 100 brls. |
| Calcutta,    | 100      | 100      |           |
| Christiania, | 38       |          |           |
| Copenhagen,  | 10       |          |           |
| Demerara,    | 8        |          |           |

**Soda Ash—**

|              |          |          |           |
|--------------|----------|----------|-----------|
| Adelaide,    | 177 cks. |          |           |
| Antwerp,     |          | 467 bgs. |           |
| Baltimore,   | 102      | 2,565    |           |
| Barcelona,   | 40       |          |           |
| Boston,      | 43 tcs.  | 1,600    |           |
| Brisbane,    | 22       |          |           |
| B. Ayres,    | 15 bls.  | 15 kgs.  | 100 brls. |
| Calcutta,    | 100      | 100      |           |
| Christiania, | 38       |          |           |
| Copenhagen,  | 10       |          |           |
| Demerara,    | 8        |          |           |

**Soda Alkali—**

|            |          |  |  |
|------------|----------|--|--|
| Barcelona, | 35 brls. |  |  |
| Seville,   | 100      |  |  |

**Soda Ash—**

|               |       |         |
|---------------|-------|---------|
| St. Thomas,   |       | 4       |
| Salonica,     | 50    |         |
| San Juan,     | 100   |         |
| Shanghai,     | 8,766 |         |
| Singapore,    | 11    | 40 kgs. |
| Sierra Leone, | 252   |         |



**MANCHESTER.***Week ending February 12th.*

|                                          |                 |
|------------------------------------------|-----------------|
| <b>Albumen—</b>                          |                 |
| Lisbon, 1 ck.                            |                 |
| <b>Alkali—</b>                           |                 |
| Treport, 60 dms.                         |                 |
| <b>Aniline Oil—</b>                      |                 |
| Hamburg, 4 dms.                          |                 |
| Rotterdam, 4                             |                 |
| <b>Chemicals (otherwise undescribed)</b> |                 |
| Alexandria, 100 brls.                    |                 |
| Antwerp, 28 cks.                         |                 |
| Larnaca, 3                               |                 |
| Rotterdam, 171                           | 25 kgs.         |
| Sasa, 3                                  | 100 dms.        |
| Beyrout, 5                               |                 |
| Syra, 2                                  |                 |
| <b>Coal Products (otherwise undes.)—</b> |                 |
| Antwerp, 104 bgs.                        |                 |
| Hamburg, 68 cks.                         |                 |
| Rotterdam, 50 brls.                      |                 |
| Treport, 27                              | 3 cs. 170 brls. |
| <b>Coal Tar Dyes—</b>                    |                 |
| Rotterdam, 4 kgs.                        |                 |
| Rouen, 1                                 | 1 cs.           |
| Yokohama, 1                              |                 |
| <b>Copperas—</b>                         |                 |
| Alexandria, 73 brls.                     |                 |
| <b>Dyestuffs (otherwise undescribed)</b> |                 |
| Rotterdam, 5 cs.                         |                 |
| <b>Extracts—</b>                         |                 |
| Rouen, 9 cks.                            |                 |
| <b>Linseed Oil—</b>                      |                 |
| Jaffa, 10 brls.                          |                 |
| <b>Painters' Colours—</b>                |                 |
| Alexandria, 200 brls.                    |                 |
| Lisbon, 1 ck.                            |                 |
| <b>Pitch—</b>                            |                 |
| Cette, 480 t.                            |                 |
| Antwerp, 858                             | 6 c.            |
| <b>Salt—</b>                             |                 |
| Rotterdam, 150 t.                        |                 |
| <b>Soap—</b>                             |                 |
| Lisbon, 20 bxs.                          |                 |
| <b>Starch—</b>                           |                 |
| Gothenburg, 12 sks.                      |                 |
| <b>Tar Oil—</b>                          |                 |
| Antwerp, 2 dms.                          |                 |

**HULL.***Week ending February 8th.*

|                                          |       |
|------------------------------------------|-------|
| <b>Alkali—</b>                           |       |
| Naples, 28 cks.                          |       |
| <b>Ammonium Sulphate—</b>                |       |
| Dunkirk, 100 bgs.                        |       |
| Ghent, 462                               |       |
| <b>Benzol—</b>                           |       |
| Amsterdam, 10 dms.                       |       |
| Rotterdam, 25 cks.                       |       |
| <b>Caustic Soda—</b>                     |       |
| Hango, 15 dms.                           |       |
| <b>Chemicals (otherwise undes.)—</b>     |       |
| Antwerp, 107 pks.                        |       |
| Boston, 31 cks.                          |       |
| Christiania, 15                          |       |
| Drontheim, 2                             |       |
| Genoa, 16                                | 2 cs. |
| Gothenburg, 5                            |       |
| Hamburg, 143                             |       |
| Rotterdam, 67                            |       |
| Stettin, 3                               |       |
| <b>Cottonseed Oil—</b>                   |       |
| Amsterdam, 117 t.                        |       |
| Antwerp, 1,094                           |       |
| Christiania, 12                          |       |
| Ghent, 50                                |       |
| Hamburg, 1,640                           |       |
| Marseilles, 1,245                        |       |
| Rotterdam, 1,650                         |       |
| Stettin, 6                               |       |
| <b>Dyestuffs (otherwise undescribed)</b> |       |
| Boston, 60 cks.                          |       |
| Hamburg, 1 cs.                           |       |
| <b>Linseed Oil—</b>                      |       |
| Bergen, 30 c.                            |       |
| Christiania, 235                         |       |
| Christiansand, 71                        |       |
| Christiansund, 76                        |       |
| Drontheim, 149                           |       |
| Hamburg, 315                             |       |
| Stavanger, 35                            |       |
| <b>Manure—</b>                           |       |
| Dunkirk, 53 t.                           |       |
| Hamburg, 135 bgs.                        |       |
| Hachburg, 803                            |       |
| Leghorn, 4 cks.                          |       |

**Mineral White—**

|                           |       |
|---------------------------|-------|
| Hamburg, 14 cks.          |       |
| <b>Paint—</b>             |       |
| Genoa, 22 cks.            |       |
| Marseilles, 15            |       |
| <b>Painters' Colours—</b> |       |
| Amsterdam, 4 cks.         |       |
| Antwerp, 81               |       |
| Boston, 141               |       |
| Christiania, 42           |       |
| Dunkirk, 185 dms.         | 1 pk. |
| Gothenburg, 3             |       |
| Ghent, 2                  |       |
| Harlingen, 12             | 1 cs. |
| Hamburg, 12               |       |
| Hango, 6                  |       |
| New York, 88              |       |
| Rouen, 26                 |       |
| Rotterdam, 9              |       |
| Stavanger, 6 dms.         |       |
| <b>Pitch—</b>             |       |
| Antwerp, 330 t.           |       |
| Dunkirk, 313              |       |
| Leghorn, 196              |       |
| Rouen, 5                  |       |
| <b>Rosin—</b>             |       |
| Stavanger, 12 cks.        |       |
| <b>Superphosphate—</b>    |       |
| Gothenburg, 400 bgs.      |       |
| <b>Tar—</b>               |       |
| Rotterdam, 10 cks.        |       |
| <b>Varnish—</b>           |       |
| Antwerp, 1 ck. 1 cs.      |       |
| Genoa, 4                  | 2     |
| Gothenburg, 1             | 3     |
| Ghent, 1                  | 2     |
| Marseilles, 3             |       |
| Stettin, 1                |       |

**GLASGOW.***Week ending February 13th.*

|                                          |      |
|------------------------------------------|------|
| <b>Ammonium Sulphate—</b>                |      |
| Demerara, 153 t. 4½ c.                   |      |
| Cullera, 56                              | 14   |
| Trinidad, 5                              | 5½   |
| Valencia, 245                            | 9½   |
| Hamburg, 50                              | 4    |
| Nantes, 10                               | 1    |
| <b>Asbestos—</b>                         |      |
| E. London, £113                          |      |
| <b>Bleaching Powder—</b>                 |      |
| France, 5 t. ½ c.                        |      |
| <b>China Clay—</b>                       |      |
| Rio de Janeiro, 7 t. 14 c.               |      |
| <b>Coal Products—</b>                    |      |
| <b>Pitch</b>                             |      |
| Gothenburg, 260 t. 23 c.                 | £160 |
| Amsterdam, 383                           |      |
| Calcutta, 1,190                          |      |
| Italy, 136                               |      |
| U.S.A., 2                                |      |
| <b>Tar</b>                               |      |
| Christiania, 70 brls.                    |      |
| Hamburg, 10                              |      |
| Bombay, £88                              |      |
| <b>Tar Oil</b>                           |      |
| Hamburg, 8 t.                            |      |
| <b>Coal Products (otherwise undes.)—</b> |      |
| Rotterdam, £305                          |      |
| <b>Copper Sulphate—</b>                  |      |
| France, 5 t. 1 c.                        |      |
| <b>Cottonseed Oil—</b>                   |      |
| Demerara, 1 t. 12½ c.                    |      |
| <b>Gelatine—</b>                         |      |
| U.S.A., £1,739                           |      |
| <b>Glucose—</b>                          |      |
| U.S.A., 8 t. 7 c.                        |      |
| <b>Lead Acetate—</b>                     |      |
| Bombay, £65                              |      |
| <b>Linseed Oil—</b>                      |      |
| Rio Grande Do Sul, 2 t. 18 c.            |      |
| Santos, 2                                | 1½   |
| <b>Manure—</b>                           |      |
| Cullera, 252 t. ½ c.                     |      |
| Trinidad, 55                             | 5    |
| Valencia, 267                            | 15   |
| <b>Paint—</b>                            |      |
| Calcutta, £160                           |      |
| Bombay, 35                               |      |
| <b>Painters' Colours—</b>                |      |
| Bombay, £175                             |      |
| Johannesburg, 21                         |      |
| Cape Town, 78                            |      |
| E. London, 23                            |      |

**Paraffin Wax—**

|                              |     |
|------------------------------|-----|
| Rouen, £30                   |     |
| Antwerp, 28                  |     |
| Barcelona, 304               |     |
| Madras, 70                   |     |
| Christiania, 90              |     |
| Bordeaux, 184                |     |
| Cape Town, 56                |     |
| Marseilles, 20               |     |
| <b>Potash Salts—</b>         |     |
| Madras, 6 t. 9¼ c.           |     |
| Cape Town, 18                |     |
| <b>Potassium Bichromate—</b> |     |
| Rouen, £399                  |     |
| Antwerp, 182                 |     |
| Barcelona, 1,094             |     |
| Rotterdam, 1,218             |     |
| <b>Sheep Dip—</b>            |     |
| B. Ayres, £78                |     |
| <b>Soap—</b>                 |     |
| Johannesburg, 2 t. 7 c.      |     |
| Durban, 4                    | 16¼ |
| Trinidad, 6                  | 16  |
| Valparaiso, 1                | 5   |
| E. London, 2                 | 16  |
| U.S.A., 1                    | 2   |
| <b>Sodium Bichromate—</b>    |     |
| Rouen, 1 t. 5 c.             |     |
| Antwerp, 5                   | 6¼  |
| Barcelona, 11                | 7¼  |
| <b>Sulphuric Acid—</b>       |     |
| Bombay, £1,510               |     |
| <b>Treacle—</b>              |     |
| Gothenburg, 7 t. 10 c.       |     |
| Bergen, 3                    | 15  |
| Christiania, 9               |     |
| <b>White Lead—</b>           |     |
| Transvaal, £91               |     |

**TYNE.***Week ending February 8th.*

|                            |      |
|----------------------------|------|
| <b>Alkali—</b>             |      |
| Gothenburg, 5 t. 6 c.      |      |
| Copenhagen, 1              | 18   |
| Savona, 30                 | 4    |
| Rotterdam, 11              | 2    |
| Antwerp, 11                | 2    |
| <b>Alumina Hydrate—</b>    |      |
| Antwerp, 5 t. 12 c.        |      |
| <b>Ammonium Carbonate—</b> |      |
| Barcelona, 1 t.            |      |
| <b>Ammonium Chloride—</b>  |      |
| Barcelona, 2 t.            |      |
| <b>Ammonium Sulphate—</b>  |      |
| Rotterdam, 101 t. 1 c.     |      |
| <b>Antimony—</b>           |      |
| Gothenburg, 10 c.          |      |
| <b>Asbestos—</b>           |      |
| Bergen, 2 q.               |      |
| <b>Barium Bin oxide—</b>   |      |
| Rouen, 5 t. 1 c.           |      |
| <b>Bleaching Powder—</b>   |      |
| Bilbao, 10 t.              |      |
| Gothenburg, 15             | 2    |
| Aarhus, 2                  | 9    |
| Copenhagen, 3              | 6    |
| Bergen, 5                  |      |
| Drontheim, 7               | 7    |
| Oporto, 6                  | 1    |
| Rotterdam, 32              | 11   |
| Antwerp, 64                | 8    |
| <b>Carbonic Acid—</b>      |      |
| Rotterdam, 5 t. 13 c.      |      |
| <b>Castor Oil—</b>         |      |
| Hamburg, 20 lbs. 6 c. 3 q. |      |
| <b>Caustic Soda—</b>       |      |
| Valencia, 39 t. 12 c.      |      |
| Bilbao, 15                 | 1    |
| Gothenburg, 60             | 2    |
| Barcelona, 84              | 7    |
| Aarhus, 1                  | 3    |
| Copenhagen, 6              | 18   |
| Piræus, 35                 | 16   |
| Naples, 3                  | 15   |
| Antwerp, 20                |      |
| Hamburg, 41                | 14   |
| Genoa, 67                  | 5    |
| <b>China Clay—</b>         |      |
| Bilbao, 3 t. 4 c.          |      |
| <b>Linseed Oil—</b>        |      |
| Sinas, 2 t. 5 c.           |      |
| Hamburg, 12 lbs. 1         | 3 q. |
| <b>Magnesia—</b>           |      |
| Odense, 8 c.               |      |
| Barcelona, 9 t. 10         |      |
| Genoa, 4                   |      |

**Paint—**

|                                          |              |
|------------------------------------------|--------------|
| Copenhagen, 1 t. 4 c.                    |              |
| Genoa, 1                                 | 5            |
| Antwerp, 10                              |              |
| Hamburg, 2                               | 10           |
| <b>Paraffin Scale—</b>                   |              |
| Sinas, 4 t. 1 c.                         |              |
| <b>Phosphorus—</b>                       |              |
| Barcelona, 2 t.                          |              |
| <b>Soap—</b>                             |              |
| Hamburg, 1 c. 2 q.                       |              |
| <b>Soda—</b>                             |              |
| Harlingen, 5 t. 3 c.                     |              |
| Oporto, 21                               | 7            |
| Sinas, 23                                | 2            |
| Rotterdam, 10                            |              |
| Christiania, 5                           |              |
| Hamburg, 5                               |              |
| <b>Soda Ash—</b>                         |              |
| Bergen, 4 t. 17 c.                       |              |
| Antwerp, 6                               | 12           |
| <b>Sodium Silicate—</b>                  |              |
| Valencia, 3 t. 2 c.                      |              |
| Piræus, 5                                | 5            |
| <b>Sodium Sulphate—</b>                  |              |
| Gothenburg, 50 t.                        |              |
| Antwerp, 50                              | 2 c.         |
| <b>Sulphur—</b>                          |              |
| Gothenburg, 75 t.                        |              |
| Christiania, 10                          |              |
| Sannesund, 400                           | 3 c.         |
| <b>Superphosphate—</b>                   |              |
| Savona, 300 t.                           |              |
| <b>Tallow—</b>                           |              |
| Hamburg, 1 q.                            |              |
| <b>Treacle—</b>                          |              |
| Hamburg, 6 c. 1 q.                       |              |
| <b>Turpentine—</b>                       |              |
| Hamburg, 2 c. 18 q.                      |              |
| <b>White Lead—</b>                       |              |
| Oporto, 5 t. 3 c.                        |              |
| <b>GOOLE.</b>                            |              |
| <i>Week ending February 5th.</i>         |              |
| <b>Benzol—</b>                           |              |
| Boulogne, 50 cks.                        |              |
| Rotterdam, 73                            | 16 dms.      |
| <b>Coal Products (otherwise undes.)—</b> |              |
| Amsterdam, 1 ck.                         |              |
| Boulogne, 32                             | 3 dms.       |
| Ghent, 3                                 | 1 cs. 6 pks. |
| Hamburg, 6                               |              |
| <b>Colours—</b>                          |              |
| Ghent, 1 cs.                             |              |
| Rotterdam, 1                             |              |
| <b>Dyestuffs (otherwise undescribed)</b> |              |
| Antwerp, 1 ck.                           |              |
| Ghent, 5                                 |              |
| Hamburg, 1                               |              |
| <b>Manure—</b>                           |              |
| Antwerp, 120 bgs.                        |              |
| Ghent, 184                               |              |
| <b>Pitch—</b>                            |              |
| Dunkirk, 302 t.                          |              |
| Antwerp, 595                             |              |
| <b>GRIMSBY.</b>                          |              |
| <i>Week ending February 8th.</i>         |              |
| <b>Chemicals (otherwise undescribed)</b> |              |
| Antwerp, 1 ck. 10 pks.                   |              |
| Dieppe, 1                                |              |
| Rotterdam, 23 dms.                       |              |
| <b>Coal Products (otherwise undes.)—</b> |              |
| Antwerp, 1 ck.                           |              |
| Dieppe, 86                               | 1 cs. 3 pks. |
| Hamburg, 10                              | 6 brls. 31   |
| Rotterdam, 8                             |              |
| <b>Colours—</b>                          |              |
| Antwerp, 2 cks.                          |              |
| Dieppe, 2                                | 1 cs.        |
| Hamburg, 1                               |              |
| Rotterdam, 2                             |              |
| <b>Dyestuffs (otherwise undescribed)</b> |              |
| Dieppe, 2 cks. 1 cs.                     |              |
| <b>Pitch—</b>                            |              |
| Antwerp, 80 t.                           |              |



PRICES CURRENT.

WEDNESDAY, FEB. 19TH, 1896

PREPARED BY MESSRS. HIGGINBOTTOM AND CO., 116, PORTLAND STREET, MANCHESTER.

The values stated are F.O.R. at maker's works, or at usual ports of shipment in U.K. The price in different localities may vary.

| Acids:—                                    |               | £            | s. | d.       |                                                    |              | £  | s. | d. |
|--------------------------------------------|---------------|--------------|----|----------|----------------------------------------------------|--------------|----|----|----|
| Acetic, 25 % and 40 % .. .. .              | per cwt.      | 6/           | 8  | 9/-      | Lime, Acetate (brown) (ex ship) .. .. .            | per ton      | 4  | 15 | 0  |
| Glacial .. .. .                            | "             |              |    | 10/-     | " (grey) (ex ship) .. .. .                         | "            | 7  | 10 | 0  |
| Arsenic S.G., 2000° .. .. .                | "             | 1            | 0  | 0        | Magnesium (ribbon and wire) .. .. .                | per oz.      | 0  | 2  | 3  |
| Fluoric .. .. .                            | per lb.       | 0            | 0  | 3 1/4    | " Chloride (ex ship) .. .. .                       | per ton      | 2  | 7  | 6  |
| Muriatic (Tower Salts), 30° Tw. .. .. .    | per bottle    | 0            | 0  | 10       | " Carbonate .. .. .                                | per cwt.     | 1  | 17 | 6  |
| (Cylinder), 30° Tw. .. .. .                | "             | 0            | 3  | 0        | " Hydrate .. .. .                                  | per ton      | 17 | 0  | 0  |
| Nitric 80° Tw. .. .. .                     | per lb.       | 0            | 0  | 1 1/2    | " Sulphate (Epsom Salts) .. .. .                   | per ton      | 2  | 15 | 0  |
| Nitrous .. .. .                            | "             | 0            | 0  | 1 1/4    | Manganese, Sulphate .. .. .                        | "            | 16 | 10 | 0  |
| Oxalic .. .. .                             | nett          | 0            | 0  | 3 1/2    | " Borate .. .. .                                   | per cwt.     | 2  | 15 | 0  |
| Phosphoric, 1750° .. .. .                  | "             | 0            | 1  | 0        | " Ore, 70 % .. .. .                                | per ton      | 3  | 10 | 0  |
| Picric .. .. .                             | "             | 0            | 0  | 11       | Methylated Spirit, 61° O.P. .. .. .                | per gallon   | 0  | 1  | 9  |
| Sulphuric (fuming 50 %) .. .. .            | per ton       | 15           | 10 | 0        | Naphtha (Wood), Solvent .. .. .                    | "            | 6  | 3  | 0  |
| (monohydrate) .. .. .                      | "             | 5            | 10 | 0        | " Miscible, 60° O.P. .. .. .                       | "            | 0  | 3  | 0  |
| (Pyrites, 168°) .. .. .                    | "             | 3            | 0  | 0        | Oils:—                                             |              |    |    |    |
| " 150° .. .. .                             | "             | 1            | 5  | 0        | Cotton-seed .. .. .                                | per ton      | 17 | 10 | 0  |
| (free from arsenic, 145°) .. .. .          | "             | 1            | 7  | 6        | Linseed .. .. .                                    | "            | 20 | 15 | 0  |
| Sulphurous (solution) S.G. 1025 .. .. .    | "             | 3            | 0  | 0        | Petroleum, American .. .. .                        | per gallon   | 0  | 0  | 7  |
| Tannic (pure) .. .. .                      | per lb.       | 0            | 1  | 0        | Stearine .. .. .                                   | per ton      | 24 | 0  | 0  |
| Tartaric .. .. .                           | "             | 0            | 1  | 2 1/2    | Phosphorus (yellow) .. .. .                        | per lb.      | 0  | 2  | 2  |
| Arsenic, white powdered .. .. .            | nett          | 19           | 0  | 0        | (red) .. .. .                                      | "            | 0  | 2  | 8  |
| Alum (loose lump) .. .. .                  | "             | 4            | 12 | 6        | Potassium (metal) .. .. .                          | per oz.      | 0  | 3  | 7  |
| Alumina Sulphate (pure) .. .. .            | "             | 4            | 12 | 6        | " Bichromate .. .. .                               | per lb.      | 0  | 0  | 4  |
| Aluminoferrous .. .. .                     | "             | 2            | 7  | 6        | " Carbonate, 90% (ex ship) .. .. .                 | per ton      | 17 | 5  | 0  |
| Aluminium .. .. .                          | per lb.       | 0            | 2  | 10       | " Chlorate .. .. .                                 | per lb.      | 0  | 0  | 4  |
| Ammonia, Anhydrous .. .. .                 | "             | 0            | 1  | 3        | " Cyanide, 98% .. .. .                             | "            | 0  | 1  | 2  |
| " 88°=28° B. .. .. .                       | per lb.       | 0            | 0  | 3        | " Hydrate (Caustic Potash) 90 % .. .. .            | per ton      | 24 | 10 | 0  |
| " =24° B. .. .. .                          | "             | 0            | 0  | 2 1/4    | " (Caustic Potash) 75/80 % .. .. .                 | "            | 20 | 10 | 0  |
| " Carbonate .. .. .                        | nett          | 0            | 0  | 3 1/4    | " (Caustic Potash) 70/75 % .. .. .                 | "            | 19 | 10 | 0  |
| " Muriate .. .. .                          | per ton       | 22           | 15 | 0        | " Nitrate (refined) .. .. .                        | per cwt.     | 1  | 1  | 6  |
| " (sal-ammoniac) 1st & 2nd .. .. .         | per cwt.      | 39/-         | 8  | 37/-     | " Permanganate .. .. .                             | per cwt.     | 3  | 7  | 6  |
| " Nitrate .. .. .                          | per ton       | 37           | 10 | 0        | " Prussiate Yellow .. .. .                         | per lb.      | 0  | 0  | 7  |
| " Phosphate .. .. .                        | per lb.       | 0            | 0  | 6 1/4    | " Sulphate, 90 % (ex ship) .. .. .                 | per ton      | 9  | 15 | 0  |
| " Sulphate (grey) London .. .. .           | per ton       | 8            | 10 | 0        | " Muriate, 80 % (do.) .. .. .                      | "            | 8  | 10 | 0  |
| " (grey) Hull .. .. .                      | "             | 8            | 10 | 0        | Silver (metal) .. .. .                             | per oz.      | 0  | 2  | 6  |
| Aniline Oil (pure) .. .. .                 | per lb.       | 0            | 0  | 8 1/2    | " Nitrate .. .. .                                  | "            | 0  | 2  | 0  |
| Aniline Salt .. .. .                       | "             | 0            | 0  | 7 1/2    | Sodium (metal) .. .. .                             | per lb.      | 0  | 2  | 11 |
| Antimony .. .. .                           | per ton       | 29           | 15 | 0        | " Carb. (refined Soda-ash) 48 % .. .. .            | per ton      | 4  | 15 | 0  |
| " (tartar emetic) .. .. .                  | per lb.       | 0            | 0  | 7 1/2    | " (Caustic Soda-ash) 48 % .. .. .                  | "            | 4  | 5  | 0  |
| " (golden sulphide) .. .. .                | "             | 0            | 0  | 10       | " (Carb. Soda-ash) 48 % .. .. .                    | "            | 4  | 0  | 0  |
| Barium Chloride .. .. .                    | per ton       | 6            | 7  | 6        | " (Alkali) 58 % .. .. .                            | "            | 3  | 15 | 0  |
| " Carbonate (native) .. .. .               | "             | 3            | 10 | 0        | " (Soda Crystals) .. .. .                          | "            | 2  | 2  | 6  |
| " Sulphate (native levigated) .. .. .      | "             | 42/6 to 65/- |    |          | " Acetate (ex-ship) .. .. .                        | "            | 14 | 10 | 0  |
| Bleaching Powder, 35 % .. .. .             | nett          | 7            | 0  | 0        | " Arseniate, 45 % .. .. .                          | "            | 12 | 0  | 0  |
| Liquor, 7 % .. .. .                        | "             | 3            | 10 | 0        | " Chlorate .. .. .                                 | per lb.      | 0  | 0  | 6  |
| Bisulphide of Carbon .. .. .               | "             | 12           | 10 | 0        | " Borate (Borax) .. .. .                           | net, per ton | 19 | 0  | 0  |
| Chromium Acetate (crystal) .. .. .         | per lb.       | 0            | 0  | 6        | " Bichromate .. .. .                               | per lb.      | 0  | 0  | 3  |
| Calcium Chloride .. .. .                   | per ton       | 2            | 2  | 6        | " Hydrate (77 % Caustic Soda) (f.o.b.) net pr. ton | 10 ton lots  | 9  | 7  | 6  |
| China Clay (at Runcorn) in bulk .. .. .    | "             | 15/- to 30/- |    |          | " (74 % Caustic Soda) .. .. .                      | "            | 8  | 10 | 0  |
| Coal Tar Products and Dyes:—               |               |              |    |          | " (70 % Caustic Soda) .. .. .                      | "            | 7  | 10 | 0  |
| Alizarine (artificial) 20 % .. .. .        | nett          | per lb.      | 0  | 0 7 3/4  | " (60 % Caustic Soda) .. .. .                      | "            | 6  | 10 | 0  |
| Magenta .. .. .                            | "             | "            | 0  | 3 9      | " (60 % Caustic Soda, cream) (f.o.b.) .. .. .      | "            | 6  | 7  | 6  |
| Anthracene, 30 % A, f.o.b. London .. .. .  | per unit      | per cwt.     | 0  | 0 11 1/2 | " Bicarbonate .. .. .                              | "            | 6  | 10 | 0  |
| Benzol, 90 % .. .. .                       | per gallon    | 0            | 2  | 1        | " Hyposulphite .. .. .                             | "            | 6  | 10 | 0  |
| 50/90 .. .. .                              | "             | "            | 0  | 1 8 1/2  | " Manganate, 30% .. .. .                           | "            | 16 | 0  | 0  |
| Carbolic Acid (crystallised 40°) .. .. .   | per lb.       | 0            | 0  | 8 1/2    | " Nitrate (95 %) ex-ship Liverpool .. .. .         | per cwt.     | 0  | 8  | 0  |
| (crude 60°) .. .. .                        | per gallon    | 0            | 2  | 3        | " Nitrite, 98 % .. .. .                            | per ton      | 30 | 0  | 0  |
| Creosote (ordinary) .. .. .                | "             | 0            | 0  | 1 1/2    | " Phosphate .. .. .                                | "            | 13 | 5  | 0  |
| (filtered for Lucigen light) .. .. .       | "             | 0            | 0  | 2        | " Silicate (glass) .. .. .                         | per ton      | 4  | 10 | 0  |
| Crude Naphtha 30 % @ 120° C. .. .. .       | "             | 0            | 0  | 10       | " (liquid, 100° Tw.) .. .. .                       | "            | 3  | 10 | 0  |
| Grease Oils, 22° Tw. .. .. .               | per ton       | 2            | 10 | 0        | " Stannate, 40 % .. .. .                           | per cwt.     | 3  | 2  | 9  |
| Pitch, f.o.b. Liverpool or Garston .. .. . | "             | 1            | 13 | 0        | " Sulphate (Salt-cake) .. .. .                     | per ton      | 1  | 7  | 6  |
| Solvent Naphtha, 90 % at 160° .. .. .      | per gallon    | 0            | 1  | 6        | " (Glauber's Salts) .. .. .                        | "            | 1  | 10 | 0  |
| " Lucigen " and " Wells " Oils .. .. .     | "             | 0            | 0  | 2 1/2    | " Sulphide .. .. .                                 | "            | 7  | 15 | 0  |
| Copper .. .. .                             | per ton       | 44           | 15 | 0        | " Sulphite .. .. .                                 | "            | 5  | 5  | 0  |
| " Sulphate .. .. .                         | "             | 17           | 5  | 0        | Strontium Hydrate, 100% .. .. .                    | "            | 8  | 10 | 0  |
| " Oxide (copper scales) .. .. .            | "             | 41           | 10 | 0        | Sulphocyanide Ammonium, 95 % .. .. .               | per lb.      | 0  | 0  | 6  |
| Glycerine (crude) .. .. .                  | "             | 37           | 10 | 0        | " Barium, 95 % .. .. .                             | "            | 0  | 0  | 4  |
| (distilled S.G. 1250°) .. .. .             | "             | 75           | 0  | 0        | " Potassium .. .. .                                | "            | 0  | 0  | 7  |
| Iodine .. .. .                             | nett, per oz. | 0            | 0  | 7 1/2    | Sulphur (Flowers) .. .. .                          | per ton      | 6  | 15 | 0  |
| Iron Sulphate (copperas) .. .. .           | per ton       | 1            | 5  | 0        | " (Roll Brimstone) .. .. .                         | "            | 5  | 0  | 0  |
| " Sulphide (antimony slag) .. .. .         | "             | 2            | 0  | 0        | " Brimstone: Best Quality .. .. .                  | "            | 3  | 12 | 6  |
| Lead (sheet) for cash .. .. .              | "             | 12           | 15 | 0        | Superphosphate of Lime (26% .. .. .                | "            | 2  | 7  | 6  |
| " Litharge Flake (ex ship) .. .. .         | "             | 14           | 0  | 0        | Tallow .. .. .                                     | "            | 22 | 10 | 0  |
| " Acetate (white " ) .. .. .               | "             | 21           | 10 | 0        | Tin Crystals .. .. .                               | per lb.      | 0  | 0  | 5  |
| " brown " ) .. .. .                        | "             | 16           | 0  | 0        | " English Ingots .. .. .                           | per ton      | 64 | 0  | 0  |
| " Carbonat: (white lead) pure .. .. .      | "             | 16           | 0  | 0        | Zinc (Spelter) .. .. .                             | "            | 15 | 2  | 6  |
| " Nitrate .. .. .                          | "             | 19           | 0  | 0        | " Chloride (solution, 100° Tw.) .. .. .            | "            | 5  | 5  | 0  |



# THE CHEMICAL TRADE JOURNAL

AND  
OIL, PAINT and COLOUR REVIEW.

Publishing Offices: 32, BLACKFRIARS STREET, MANCHESTER.

No. 458.

SATURDAY, FEBRUARY 29, 1896.

Vol. XVIII.

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Communications for the Editor, if intended for insertion in the current week's issue, should reach the office not later than **Tuesday morning**.

## Advertisements.

Prepaid Advertisements of Situations Vacant, Premises on Sale or To be Let, Miscellaneous Wants, and Specific Articles for Sale by Private Contract are inserted in the *Chemical Trade Journal* at the following rates:—

30 Words and under ..... 2s. 6d. per insertion  
Each additional 10 words ..... 6s. 6d.

Advertisements of Situations Wanted are inserted at one-half the above rates when prepaid, viz:—

30 Words and under ..... 1s. 6d. per insertion  
Each additional 10 words ..... 6s. 3d.

Trade Advertisements, Announcements in the Directory Columns, and all Advertisements not prepaid, are charged at the Tariff rates, which will be forwarded on application.

## CURRENT TOPICS.

### GALICIAN PETROLEUM.

AS the production of oil in Galicia increases with the extension of the wells, this industry is gradually assuming more important proportions. The home trade is now well established, and the producers are apparently preparing to enter into competition with other producers. To do so entails under-selling to a large extent, but the producers seem equal to the occasion, for they are raising the price of crude consumed on the spot to recover the reduction on the exports.

This step appears to be causing considerable consternation among the members of the Refining Syndicate that has controlled the works at Trebinje, Presburg, and Galicia, though prices indicate profits that should, we think, stand paring without causing a scare. Refined oil is now worth more than six times as much as the crude, and it was refined at a profit a few years back, when crude was double its present price and refined was selling considerably lower. Increasing the value of crude by one-sixth should not, therefore, materially affect refiners, while it will make a considerable difference to producers of crude who have insufficient storage to collect and save all that flows from the wells until prices mend. At the same time it is the supply from all these comparatively little sources of crude, as in Galicia, Java, and now in the islands of the Caspian Sea, that will tend to weaken the monopoly of the S.O. by contrasting the nature of genuine petroleum with the preparation that is sold as such in this country to-day.

### THE TABLES TURNED.

About two years ago, when the nitrate industry had been flourishing and was still thought to be promising, the Chilians were disposed to grumble at nitrate grounds being acquired by foreign companies, notably English, and if they could have had their way would no doubt have done something to hamper foreign enterprise, if not choke it.

There were others who, instead of losing time over words, set to work to procure *estacamentos*. Seemingly their action was untimely and ill-advised, for the English companies are not doing too well, and the Chilean purchasers rather less so. In consequence they have been petitioning the Chilean Government to lengthen the period in which payment has to be made for the grounds purchased. The native producers claim a loss of about 30 per cent. through the depreciation of the price of nitrate and currency changes, which, it is stated, foreign producers have not been subjected to. How English and other companies have secured immunity from similar losses there is nothing to show, the bare statement being all that is adduced. It needs very little inquiry to find out that English companies have suffered as much as native companies; and yet they have duly paid their instalments,



though in one or two cases companies have been hard put to, and dividends have shrunk to very small proportions.

In spite of these facts the report of the Commission recently laid before the House of Deputies is emphatically in favour of granting an extension of time to the distressed Chilians, and it is only a small minority report that gives voice to the injustice thus wrought against those who have already discharged a *quota* of their indebtedness.

We by no means grudge the Chilians the alleviation that is to be accorded them, but ignoring all the bearings on the past, we certainly hope that the same measure of mercy will be meted out to foreign debtors, should they, under stress of circumstances, make a similar application during the next twelve months.

#### BORIC ACID AS A PRESERVATIVE.

The gradual growth of boric acid as a preservative of food stuffs, appears to be causing considerable anxiety on the part of sanitarians, and the recent decision of the trustees of the Cork Butter Market to put about half a pound of "preservative" to every half cwt. of butter, has apparently given considerable offence. It is admittedly difficult to actually ascertain how much boric acid would pass into the system in a day if this preservative be used in all sorts of edibles, but we are disposed to think that the sum total cannot be very serious, if the quantity in butter may be taken as a criterion of the quantity that would be taken daily. Making the somewhat liberal allowance of 4 oz. of butter to each person per diem, the amount of boric acid consumed daily would be slightly over 17 grains. The official dose ranges from 5 to 30 grains. It is true that a continual consumption of even very minute quantities of an antiseptic may have deleterious effects upon the system and digestion, and apparently on this ground the use of boric acid in wines is forbidden in France, and has been declared injurious by the highest hygienic authorities. At the same time it is exaggerating, to say the least, to speak of butter containing rooth part of boric acid per pound as being drugged. It is daily used in milk, cream, wines, jellies, and in salting fish in this country, and so far little has been heard from the medical profession against its use. As far as the Irish trade is concerned a more potent argument is to be found in the fact that by cultivating a taste on the part of the public for butter absolutely free from preservatives, a serious blow will be struck at Australian and New Zealand competition, since without the use of preservatives it would be impossible for fresh butter to be sent from the Colonies into our markets. The difficulty here will lay, we fear, in persuading the public to forego even "dangerous butter," if it be cheap enough, in favour of genuine Irish produce.

#### THE INSTITUTE OF CHEMISTRY.

The annual general meeting, which is to take place on Monday next, at four o'clock p.m., in the rooms of the Institute, Bloomsbury-square, promises to be of considerable interest. The report of the Council shows that they have had many interesting subjects under discussion, one of which has been the difficulty that is experienced by qualified chemists and assayers abroad, through the issue of false assays by unqualified assayers. These assays are frequently rendered wofully misleading, and it certainly should be the aim of the institute to suppress, as far as lies in its power, the issue and spread of such reports. This, of course, can only be done by imbuing assayers with the importance of maintaining the honour and integrity of their profession, and by confining, as far as is advisable, the assaying practice to competent men.

It must be admitted that, to the unscrupulous, the notion of accidentally obtaining misleading results, especially when we take into consideration the benefits that are likely to attend the issue of an assay of a doubtful ore in these days of bubble co

Apparently, as the outcome of the discussion points, Mr. F. L. Teed will move on Monday immediate steps be taken to obtain compulsory registration of all practising analytical and chemists, and further, that membership of the compulsory to all intending practitioners in the view of the foregoing remarks, the first portion of certainly appears most desirable, though it is to that, in their endeavours to maintain the dignity of the profession, the council will not be led away in manner as the Germans have recently, in endeavouring to make it a criminal offence for chemists to conceal particulars of any secret process. If they do, we as was the case in Germany, that they will merely own ends, and stultify what might have been a noble move.

## Parliamentary Jottings

#### IMPORTATION OF MINERAL OILS.

IN the House of Commons last week, replying to (Leitrim, S.),

Sir M. W. Ridley said: My attention has been drawn to the importation of mineral oils. I am not aware in America with regard to the sale of these oils is that it is not allowed to sell to consumers in the United States with a flash-point under 95° or 100°F., while they can in countries oil at a flashing point of 73°F. and under; advised that the law as to flash-point varies in nearly every State that in some States there is no law at all. To prohibit the importation of petroleum with a flash-point of less than 95 or 100 degrees Fahrenheit is prohibitive of mineral spirit which is required in many in the question whether an amendment of the law in regard to the importation of mineral oils is desirable is one that will doubtless be carefully considered by the Select Committee which I hope will be appointed.

#### PARCEL POST RATES.

On Monday Mr. Hazell asked the Secretary to the Treasury whether he would open negotiations with the railway companies to reduce the parcel post rates for all kinds of parcels, as the Government did not consider it practicable to introduce specially low rates for agricultural produce only.

Mr. Hanbury said no alteration could be made except a reduction of the rates charged by the Department general Government was unable to consent to.

#### ADULTERATED BUTTER.

On Tuesday, Mr. W. Long, in answering Mr. Kearley's application of the word "butter" in relation to butter and margarine, either in the Customs entry or otherwise, or application of a false trade description within the meaning of the Merchandise Marks Act, and if upon the arrival and exportation of the goods the officer of Customs was satisfied that there was an infringement of the law in this respect it would be competent to detain them, with a view to proceedings being taken for forfeiture, if the circumstances justified it. The difficulty in the adoption of this course, however, lies in the fact that analysis of the butter has been made, it is impossible to detect adulterated, and goods of a perishable character could not be detained in the absence of special information as to the adulteration. The suggestion from the hon. member was that the consideration of the Select Committee which I have the honour to represent should be reappointed.

Mr. Kearley further asked whether any steps were taken by the Department to trace adulterated butter from the merchant to the retailer.

Mr. Long replied that it was the duty of the local authorities to trace adulterated butter from the merchant to the retailer, leaving it to them to deal with the retailers.



## The Patent List.

*This list is compiled from Official sources in the Manchester Technical Laboratory, under the immediate supervision of George E. Davis and Alfred R. Davis, who report professionally upon the value of Chemical Patents.*

### APPLICATIONS FOR ENGLISH LETTERS PATENT.

Artificial Manures.—D. Cross. 2,956. Feb. 10.  
Platinum Vessels for Concentrating Sulphuric Acid.—H. A. Kent. 2,957. Feb. 10.  
Painting Machine.—The Pneumatic Painting Machine Corporation, Ltd., and H. C. Cleaver. 3,033. Feb. 10.  
Reducing Nitrobenzol and Homologues with Hydrosulphide of Sodium.—J. Y. Johnson. 3,035. Feb. 10.  
Sewage Purification Tanks.—J. B. Petrie. 3,047. Feb. 11.  
Collecting and Utilizing Air Free CO<sub>2</sub> from Fermentation, etc.—A. J. Boulton. 3,098. Feb. 11.  
Smoke Condensing Apparatus.—S. S. Pridham and G. Heinkel. 3,115. Feb. 11.  
Chlorine from HCl or Chlorides, and obtaining Bye-products. P. J. Beveridge. 3,134. Feb. 11.  
Preparing Cutch.—J. R. Carruthers. 3,178. Feb. 12.  
Apparatus for Concentrating Sulphuric Acid.—W. M. Mackey. 3,196. Feb. 12.  
Extracting Manganese from its Ores and Preparing Compounds of the same.—J. B. Torres. 3,201. Feb. 12.  
Polysulphides of Potassium and Sodium.—F. L. Bartelt. 3,230. Feb. 12.  
Dust Collectors.—F. Prinz. 3,310. Feb. 13.  
Soft Soap.—W. Hanley. 3,312. Feb. 13.  
Steam Trap.—J. E. Slack. 3,472. Feb. 15.

### ABSTRACTS OF LATEST COMPLETE SPECIFICATIONS.

*These abstracts are specially prepared for the Chemical Trade Journal and ALL RIGHTS of publication are RESERVED. This is the earliest series of abstracts of Chemical and allied patents accessible to the public.*

Improved Method or Apparatus for Counteracting, Deflecting, and Distributing Gases and Flames in Chemical Works, Furnaces, or the like. F. E. Gätcke, 15, Marktstrasse, Altona-Bahrenfeld. Eng. Pat. 2,717. Feb. 7, 1895.

In glass works and many chemical industries the workers are troubled with the heat and fumes escaping when furnace doors are opened. The object of this invention is to prevent the escape of gases, etc., in this way, by means of an intercepting screen of air or steam. Taking, for instance, a glass furnace: Two pipes are run round the furnace, one above and the other below the "mouths" of the pots. The lower pipe is provided with a plurality of nozzles opposite each opening, and the nozzles on the upper pipe pass through the wall of the furnace at an angle so as to cause the injected air or steam to form an oblique shield or screen. In the same way the air passing upwards in front of the opening prevents the escape of the gases and the radiation of the heat, though the mouth of the pot is perfectly open and free for withdrawing the "metal." Where the fumes are objectionable, the screen can be formed of some counteracting gas. There are two drawings, showing the arrangement in detail and the general application to a glass furnace.

Improved Method of Rendering Acetylene and other Gases rich in Carbon, suitable for Lighting and Heating Purposes. L. M. Bollier, 12, Avenue d'Orleans, Paris. Eng. Pat. 6,101. Mar. 23, 1895.

Acetylene when burnt by itself emits a reddish smoky flame owing to the unconsumed carbon escaping. To make practical use of the gas as obtained commercially by Patent 2,820, 1895 (*C.T.*, 457, p. 131), the patentee has tried special burners, but these, apart from possessing certain inherent disadvantages, would entail too great a cost in the change of service. According to this invention, therefore, the desired increase of the surfaces of contact between the oxygen and the acetylene is obtained by diluting the latter with an inert gas. Air for this purpose is inadmissible owing to the explosive nature of mixtures of air and acetylene, and consequently ordinary nitrogen is employed. The proportions can be varied at will, but equal quantities of nitrogen and acetylene are found to give good results. The same principle is applied to other gases too rich in carbon to be burnt alone.

A New or Improved Method of Preventing the Putrefaction of Blood. F. V. Friderichsen, 68, Ny. Stormgalle, Copenhagen. Eng. Pat. 23,066. Dec. 2, 1895.

It is well-known that blood could be used to advantage in the preparation of cattle feeding stuffs if it could only be kept sound and free from putrefaction. This invention claims to attain this end by mixing from 10 to 70 per cent. of molasses or treacle with the blood, drying, and then using the resulting meal or powder, or using the mixture at once in the moist state.

A Process of and Means for Protecting Iron, Steel and like Materials from Rust. H. E. Newton, 6, Bream's-buildings, Chancery-lane, W.C. (Communicated by The Farbenfabriken vorm. F. Bayer and Co., Elberfeld.) Eng. Patent. 4,027. Feb. 25, 1895.

By this process the surface needs no previous preparation, but even in the rusty state can be coated with the mixture, which consists of hydroferrocyanic or hydroferricyanic acids, or a mixture of both, which form double salts, constituting a rust-preventing coating. This process is different from the old and well-known method of "blueing" with potassium ferrocyanide and ferric chloride, as this treatment did not ensure freedom from rust. The mixture is prepared by decomposing salts of the acids with any mineral acid, filtering off the precipitate, and adding to the same enough water to yield a mixture containing about 10% to 25% of the hydroferro- or hydroferric acid. The precipitates are not washed, as the  $\frac{1}{4}$ % to  $\frac{1}{2}$ % of acid which remains is found to be distinctly advantageous, and conducive to the action of the mixture. The precipitates can be mixed with wood spirit or any other desirable medium.

Improvements in the Preparation of Basic Slag for Fertilizing Purposes. W. Hutchinson, The Ferns, Pennfields, Wolverhampton, and A. Hickman, M.P., of Wightwick, Wolverhampton. Eng. Pat. 6,112. Mar. 25, 1895.

The efficiency of Thomas slag or basic slag is rendered greater by the addition of blast furnace or cupola slags. The latter being "acid" slags, rich in silicic acid and lime, renders the phosphoric acid in the Bessemer or basic Siemen's slag available and more easily assimilated. The proportions vary according to the strength of both slags, but as a rule equal proportions give satisfactory results. A analysis of an average blast furnace and cupola slag is given.

## EXPORTS OF SICILIAN SULPHUR.

THE following statistics have been compiled by Mr. A. S. Malcomson, of New York, and will be found useful as well as interesting:—

| To.                    | 1892.  | 1893.  | 1894.   | 1895.  |
|------------------------|--------|--------|---------|--------|
| United States .....    | 84,450 | 83,901 | 105,773 | 99,227 |
| France .....           | 73,176 | 89,736 | 56,932  | 69,696 |
| Italy .....            | 38,711 | 54,486 | 49,895  | 49,349 |
| United Kingdom.....    | 24,853 | 27,453 | 22,165  | 24,043 |
| Russia .....           | 14,178 | 19,730 | 17,977  | 17,962 |
| Portugal .....         | 13,490 | 14,545 | 8,670   | 14,562 |
| Germany .....          | 14,326 | 16,259 | 16,437  | 15,472 |
| Austria .....          | 9,096  | 10,169 | 11,494  | 12,170 |
| Greece, Turkey .....   | 14,845 | 13,840 | 16,870  | 16,195 |
| Belgium .....          | 5,133  | 4,358  | 5,644   | 6,410  |
| Sweden, Norway, D'mark | 4,501  | 6,579  | 7,887   | 5,730  |
| Spain .....            | 7,382  | 3,499  | 3,445   | 5,753  |
| Holland .....          | 2,183  | 2,957  | 2,365   | 3,335  |
| Other countries .....  | 3,152  | 1,680  | 3,376   | 7,732  |

Total, tons ..... 309,536 . 349,192 . 328,930 . 347,636

The stock in Sicily at the end of December, 1895, was 203,756 tons; 1894, 198,513 tons; 1893, 210,665 tons; 1892, 175,299 tons.

UNIQUE "SHERRY"—Adulteration seems hardly the word to describe the little trade trick reported to the Local Government Board as described in the new report of that Department just issued. A sample of British sherry, so-called, was in question, but the analyst could not say the sherry was adulterated since there was no sherry there. The only resemblance the mixture had to sherry was its colour. It did not even contain alcohol. It was "composed of sugar, a little essence, and bisulphide of soda." For the adulteration of food and drugs there is still a large field, thanks to the supineness of many of our borough and county authorities. The Local Government Board's report states that there are thirty-seven districts with an aggregate population of nearly two millions where the Sale of Food and Drugs Acts are entirely, or almost entirely, ignored. The appointment of an analyst is in itself a protection to a community. In the towns where samples are taken for inspection the number condemned as adulterated is diminishing year by year. Pepper, once a favourite article with the adulterator, may now be bought with more confidence. Out of sixteen hundred samples tested, only ten were condemned. Ten per cent of the coffee sampled is still found to be wrong, but the average for ten years after the passing of the Act of 1875 was 18 per cent, so that the taste in coffee or the honesty or the coffee dealer, or the fear of the inspector, must be different from what it was. A sample of tea condemned for containing an excessive quantity of mineral matter (including minute particles of glass), straw, woody fibre, and other things suggestive of shop sweepings, appears to have been unique.



## Official Memoranda.

(From the Board of Trade Journal.)

### CUSTOMS TARIFF OF NEW ZEALAND.

(Concluded from p. 68).

The following is an abstract including all materials relating to the chemical trades:—

|                                       |                                | Rate of Duty |
|---------------------------------------|--------------------------------|--------------|
|                                       |                                | £ s. d.      |
| Kerosine Oil .....                    | per gall.                      | 0 0 6        |
| Naphtha .....                         | "                              | 0 0 6        |
| Linseed Oil .....                     | "                              | 0 0 6        |
| Paints and Colours in Oil .....       | per cwt.                       | 0 2 6        |
| " " ready for use .....               | "                              | 0 5 0        |
| Stearine .....                        | per lb.                        | 0 0 1½       |
| Whiting and Chalk .....               | per cwt.                       | 0 1 0        |
| Candles .....                         | per reputed package or per lb. | 0 0 2        |
| Cement .....                          | per barrel.                    | 0 2 0        |
| Soap, Common .....                    | per cwt.                       | 0 5 0        |
| Soap (n.o.e.) .....                   | —                              | 25% ad val.  |
| Soap Powder, Dry and Soft Soaps ..... | —                              | 20% ad val.  |
| Paraffin Wax .....                    | per lb.                        | 0 0 1½       |

#### FREE LIST.

Rock Salt.

Acids: boracic, carbolic, in bulk; fluoric, muriatic, nitric, oxalic, oleic, pyrogallic, salicylic, sulphuric.

Disinfectants.

Drugs and Chemicals, viz.: alum; sulphate of aluminium; sulphate of ammonia; anhydrous ammonia; aniline dyes; arsenic; bluestone, or sulphate of copper; borax; catechu; chloride of calcium; nitrate of silver; cochineal; creosote, crude or commercial; glycerine, crude; gum, arabic and tragacanth; gum benzoïn; artificial gum arabic; gum damar; phosphorus; potash, caustic potash, and chloride of potash; pearlash; cyanide of potassium; sal-ammoniac; saltpetre; acetate of soda, crude; soda-ash; caustic soda; nitrate of soda; silicate of soda; sulphate of soda; sulphide of sodium; strychnine; sulphur; chloride of zinc; iron sulphates; gall-nuts; turmeric; saffron; nitrous-oxide gas; tree washes; insecticides; maltine, chlorodyne.

Sheep Dips.

Brewers' Water-hardening Chemicals.

Tanning Materials, crude.

Turpentine and Driers.

Dyestuffs and Dyeing Materials, crude.

Manures.

### THE ESPARTO-FIBRE INDUSTRY OF TUNIS.

Esparto-fibre, known as *halfa* by the Arabs and *alfa* in French, is a kind of marine bulrush which grows abundantly on the North African coast, chiefly in Tripoli and Tunis.

The principal districts in Tunis whence this product is obtained are the territories of the following tribes: Hemmema, Slass, Erghoumma, and in the neighbourhood of Cardato in Sfax and Susa.

Esparto-fibre is generally divided into two kinds:—The *rusia* long and straight, and the *mahbula*, which takes its name from the twisted nature of the growth.

The *rusia* kind includes nine different qualities, all taking their names from the districts in which they are found.

The Hemmema kind has a long and rather thick stalk, and is used for cigar straws and for the manufacture of artistic objects in basket-work, &c.; it is much employed in paper making, and is largely exported to England, where it is always in demand.

The Slass species is a very beautiful plant and preferred at Marseilles for the manufacture of *scourins* (mats which are placed under the presses in oil manufactories); it is used also in rope and paper making. The principal market in France is at St. Louis, on the Rhone, but though the consumption is on the increase, even there but little is asked for, paper being still largely made from wood and rags.

The Erghoumma kind all goes to England, being shipped at the port of Gabes; the Schebba kind is the most fine, very elastic, and is much used for textile purposes; and the other qualities are made up into paper, baskets, matting, carpets, etc.

The *mahbula* esparto is chiefly found along the coast from Mehdiä to Tripoli, about 25 miles inland.

At Sfax, in the months of June, July, and August, the inhabitants of the Kerkena Islands flock to the coast of the mainland, gather it, and make it into bundles, which are left to dry in the sun; in one day from 4,000 to 5,000 kilogs. can be obtained; it is spread on the seashore to be dried, then steeped in the sea, and again stretched out along the

sands to dry, after which the fibre is twisted and rubbed in the till a fairly good cord is produced.

The inhabitants of these Kerkena Islands occupy themselves addition with making other kinds of thicker rope, even cable these latter are much liked by sailors, being lighter than hen cheaper, and quite as durable. Sea-water, instead of detergent seems to strengthen them, and were it not for a certain elasticity they would be more generally adopted by larger vessels. Kerkenines also make baskets and mats for the backs of camels.

The export trade of *mahbula* by way of Marseilles is very small amount only being sent to Italy, but the thicker rope is sent to Trapani and Cagliari, where good use is made of it in the fisheries.

As an article for the textile industry esparto-fibre is principal in England, hardly at all in France, and very little in Italy.

The principal markets in Tunis for esparto are Sfax, Gab Skira, and the sale is effected by public auction, the municipal acting a land-tax; the stuff is done up in fresh bundles, which are well dried to avoid fermentation, and it is finally made up in portation in bales (by means of hand-presses) of about 150 each.

The Tunisian fibre pays an export duty of 1·27 francs per 100 but, if worked up, is exempt. The Tripoli fibre, on the other is not subject to any export duty at all.

### PRODUCTION OF SUGAR IN GERMANY.

According to the German official statistics as to the production taxation of sugar in the German Customs district, there were in 1894-95 467 sugar manufactories, 405 of which were by sugar factories, 56 were sugar refineries, and 6 were for extraction from molasses. These factories, according to the "Handels Museum" altogether 14,521,030 tons (metric tons of 2,204 lbs.) of beet produced 1,692,011 tons of raw sugar, as well as 992,136 tons of all kinds ready for consumption, the figures for the 1893-94 being 1,270,508 tons of raw sugar and 819,629 tons of sugar ready for consumption. The quantity of beet-roots worked up was the ever known in Germany; the 1893-94 figures were 10,644,355. The importation of sugar into Germany was insignificant, and remained about the same level as in the previous year. On the other considerably larger quantities of sugar were exported in 1894-95 the previous year, although the export of molasses has fallen to 1894-95, 609,663 tons of raw sugar and 392,857 tons of sugar ready for consumption, as compared with 436,674 tons and 262,6 respectively in 1893-94. The consumption of sugar in Germany year 1894-95 was computed at 552,695 tons of refined sugar, i.e. kilogs (23½ lbs.) per head of the population, which compares 10·1 kilogs. in 1893-94 and 9·1 kilogs., the average of the last working years.

## Legal Intelligence.

### SUPREME COURT OF JUDICATURE.

#### HOUSE OF LORDS.

(Before the Lord Chancellor, and Lords Herschell, Macnaghten, Morris, and Shand.)

REDDAWAY v. BANHAM.

This well-known case was re-opened last week, Mr. MacCall, argument on behalf of the respondent, maintaining that a person manufactured belting and in camel hair was entitled to call it "hair belting."—Lord Herschell observed that this was not a trade case; it was on a broader basis than that. The jury had found the respondents so described their belting that it was likely that it would be misled, and the law said a person should not be allowed to pass off his goods as those of another.—Mr. MacCall contended such a name as "camel hair belting" as applied to belting made of camel hair could not become the exclusive property of one manufacturer. Mr. MacCall, continuing, contended that the name camel belting was merely descriptive, but plus something else.—Lord Herschell said it was only part of the truth, and not the whole truth.—Macnaghten said he thought the learned judge's summing up extremely careful, and he put most clearly to the jury the question whether "camel hair" meant Reddaway's, and they said it. Lord Herschell said a man in the trade who said of the respondent material, "This is camel hair belting," would be telling a lie, but he would know that he was deceiving the purchaser. In conducting business the trade meaning of a word must be taken, and not dictionary meaning.—At the conclusion of the learned counsel's address, the Lord Chancellor said their lordships did not desire to give a reply. They would, however, take time to consider the form of judgment.



## Reports of Companies.

### BRUNNER, MOND AND CO., LTD.

Yearly ordinary general meeting of this company was held Liverpool last week. Sir J. T. Brunner, M.P., the chairman, presided. The report of the directors stated that the net showed a balance to the credit of profit and loss account of the half-year of £162,502., which, with the amount brought forward from the previous half-year, made a total of £222,502. The directors proposed to deal with the balance as dividend on the preference capital, at 7 per cent. per annum, dividend on the ordinary capital, at 30 per cent. per annum, amount to be written off patents' accounts, £2,500.; and to be carried forward, £95,678. The Chairman, in moving on of the report and balance-sheet, said they were of the factory character. There was a large new item in the net under the head of property and assets—that was the Middlesbrough. He mentioned at their last meeting in August had taken possession of these works on the first day of that month they had the results of five months' working in the net now submitted. He was very glad to say that there was effect that these Middlesbrough works would be a thoroughly item of their property, and that they would be a propounder in the making of a dividend. The items, stocks on hand owing to and by the company, were exactly in proportion to what was done. They were aware—in fact it was notorious—that they had during the last half-year entered into an agreement with Alkali Company and Messrs. Bowman, Thomson, and Co. shareholders would readily understand, the directors did such a movement, but they considered that in the interests of shareholders they were not bound to resist, and even that they had to accept, any proposals that might be made in this respect. The prices of alkali were, it was also notorious, below the market in most cases, and that, in the directors' opinion, a very unwholesome state of affairs. They were glad for the sake of bringing to an end this unreasonable competition. Indeed, as the directors of the Company always felt themselves, they were very decidedly of opinion that they ought not to put in such a position as would encourage fresh competition in the market. Therefore he thought all parties were agreed that they should raise the market prices so as to encourage undue competition. H. Coghill seconded the motion, which was agreed to. In reply, the Chairman stated that the agreement with the Alkali Company did not limit them in their make in any way. J. Galloway, Henry Brunner, Thomas H. Forgan, and Messrs. T. W. Read and Co., chartered accountants, appointed auditors.

### SALT UNION, LIMITED.

The annual report of the directors of this company states that the gross tonnage of salt delivered by the union in 1895 was 1,000,000 tons. The depression of 1894 in the large industries in which salt is used for manufacturing purposes was continued throughout 1895, whereby their demand for salt was considerably reduced. Coincident with the decrease in general shipbuilding from the salt ports of the country, there has been a decrease in the shipments of salt. The action commenced by Mr. Deakin, a vendor to the company, for breaches of agreement with him as a salt distributor came before the House of Lords in 1894. Their lordships decided one of the questions in favour of the company, but felt compelled to decide that in the other a breach of agreement had been committed. This was remitted to the committee for further consideration, and nominal damages of one guinea were awarded to Mr. Deakin. Against this decision Mr. Deakin entered notice of appeal in the courts. The matter being still *sub judice*, your directors are not able to deal with the merits of the case. During the year a sum of £14,697. 12s. 7d. has been spent on the development of your works in the Durham district, including the cost of loading stages and other shipping facilities. These extensions, despite the general decrease in the salt trade in the Durham district, enabled the union to increase its own trade there as compared with previous years. The Bill promoted by the union, in conjunction with Messrs. Brunner, Mond, and Co., Limited, for altering the name of the River Weaver Navigation Trust, came before a committee of the House of Commons in 1895. After hearing evidence the committee decided to incorporate the Bill promoted by the Weaver Navigation Trust with that of the union and the other traders on the river. The Bill, so amended, received the Royal Assent in 1895. Under this Act the union, which is the largest

toll-payer on the navigation, has now some representation on the trust. In conjunction with the District Council and other property owners and brine pumpers at Winsford and elsewhere, your directors opposed the Provisional Order Confirmation Bill of 1895, by which Northwich, Winsford, Middlewich, and Sandbach would have been joined in one area under one Compensation Board. After an inquiry lasting nine days, a Committee of the House of Commons amended the Confirmation Bill, and drew a separate district for Northwich. The Bill, as amended, will shortly come before a Committee of the House of Lords. Your directors have pleasure in stating that the issue in March, 1895, of £200,000. of "B" stock (part of the £250,000. authorised at the last general meeting) was duly subscribed and allotted. The premium received thereon, after deducting the expenses of issue, left a balance of £3,286. 18s. 11d., which has been applied in reduction of the sum paid for the acquisition of distribution businesses and of covenants with vendors. During the year the sum of £15,587. 13s. 4d. expended on new works, has been charged to the general capital account. The amount standing to the credit of profit and loss account for salt, brine, carriage, and sundry trading was £276,384. 14s. 11d., and from other sources £37,823. 18s. 11d., making the total amount £314,208. 13s. 10d.; after deducting the cost of maintenance of plant, distributors' discounts, agency, and other charges set forth in the profit and loss account, the profits from all sources amount to £162,154. 14s.; and the amount brought forward £10,158. 17s. 11d.—£172,313. 11s. 11d.; from this sum deduct the debenture stock interest paid on 1st July, 1895, and 1st January, 1896, £51,075.; leaving £121,238. 11s. 11d. Your directors recommend that dividends for the year ended 31st December last be declared at the rate of 7 per cent. on the preference shares, which will require £70,000.; and at the rate of 2 per cent. for the year on the ordinary shares, which will absorb £40,000.; and that there be carried forward £11,238. 11s. 11d. Also that the dividends be payable on and after 14th March, 1896. Mr. Herman John Falk and Mr. Walter Robinson, directors, retire by rotation, and offer themselves for re-election. The auditors, Messrs. Cooper Brothers and Co., London, and Messrs. Harwood, Banner, and Son, Liverpool, retire as usual, and offer themselves for re-election.

### THE PHOSPHO-GUANO CO.

The annual meeting of this company, whose works are at Seacombe, Cheshire, was held last week at the City Terminus Hotel, London. Mr. Thomas Chilton, who presided, moved the adoption of the report, and stated that their profits for the year amounted to £4,522. 11s., which, with £4,946. 16s. brought forward from the last account, placed £9,469. 8s. to the credit of profit and loss. He was sorry that their report was not so favourable as it had been in previous years. They had had a very poor year, and were only able to pay a dividend of 4 per cent. As all the shareholders remembered, they had a very bitter winter last year, and the weather, too, was exceedingly bad on the continent, and therefore it was impossible to use manure. On the continent last year there was a severe drought, which again reduced the amount of manure used. These were the principal causes which had led to the reduction of the profit and consequent reduction of the dividend. The competition of the local manufacturers on the continent had greatly increased, and so lower prices had to be taken. He believed that the state of the company would still remain strong, and it was better to give a dividend of 4 per cent. than reduce the amount carried forward. They had a large quantity of stock on hand, but it was not because they had purchased it, but because there had been no sale for it. He wished he had been able to give a better account of the company's working, and a better prospect for the future, but they could not look forward to improvement until trade revived. Mr. Robert P. Wood seconded the motion. In replying to a shareholder, the Chairman said that he could not hold out any fair prospect for the future, owing to local competition on the continent, which he feared would considerably reduce prices; but he assured the shareholders that the company was in a very sound condition. The report was adopted. Mr. R. P. Wood was re-elected a director.

### DIVIDENDS.

#### UNITED ALKALI COMPANY, LTD.

United Alkali Company declared dividend of 2s. per share on the ordinary shares (less tax), and 7s. per share on the preference (less tax), with £50,000. to reserve, against *nil* on ordinary and 7s. on preference, with £28,000. surplus.

#### THE SANITAS CO., LIMITED.

The directors of this company recommend a final dividend of 1s. and a bonus of 9d. per fully-paid share, making, with the interim dividend, a total distribution of 13¼ per cent. for the year ended December 31st.



## THE SALT TRADE IN 1895.

THE annual official returns of the salt trade just issued show that on the whole 1895 was a normal year. The total shipments of white salt came to 642,556 tons, and of rock salt 62,932 tons, making a total of 705,498 tons. The average for the ten years of white salt is 713,501 tons, and of rock salt 71,429 tons. In white salt there have been increases in ten markets amounting to 71,082 tons, against decreases in seven markets of 58,487 tons. The rock salt returns show an increase on white and rock salt on the year of 18,542 tons. The shipments to the United States, owing to the removal of the duty on salt, have been the largest since 1888, the total quantity sent to the Northern States being 64,064 tons, and to the Southern States 81,338 tons. The shipments to British North America have been slightly in excess of those of 1894, while those to the West Indies and Central America have been practically the same. The South American market has shown the largest relative increase of any, more than 50 per cent. of an increase on the shipments of 1894 having been made. There has been a slight improvement in the African market, notwithstanding that Germany is troubling the English manufacturers here, as in many other places. The East Indian market shows the largest absolute decrease of the year, amounting to no less than 47,368 tons, or over 80 per cent. of the total decrease. In the rock salt department Cheshire holds its own with great difficulty, owing to the unusually severe competition with Germany in the Continental markets, and Fleetwood and Carrickfergus at home. Fleetwood has shipped of white and rock salt in 1895 over 94,000 tons, as against 60,000 in 1894. The exports from Middlesbrough district have been less than in 1894, both coastwise and foreign.

## Paper-Makers' Column.

## ESPARTO IN 1895.

IN point of volume the trade in this commodity during the past year will compare favourably with its two immediate predecessors. There has been an increase of receipts, which may be regarded as a gratifying fact, while market values have undergone no violent fluctuations, and towards the close of the year a distinctly hardening tendency was apparent. It might be somewhat hazardous to conclude that prices during the last two years have touched the lowest possible level that can insure a supply at all, but evidence is not actually lacking in that direction. Algerian, perhaps, more than any other sort, has suffered from the "dry rot" in values, and that this has tended to curtail shipments is seen from the figures of the year. Tunisian also, although never very important as regards quantity nor general in consumption, has fallen to the lowest point since 1882. On the other hand, Spanish, which kept remarkably steady, and Tripoli, which underwent no permanent change of value, both show increased imports. The English consumption of esparto again marks a falling off, the total receipts being 76,721 tons, against 80,170 in 1894, but Scotland has considerably enlarged her use of the article by taking 109,687 tons, or nearly 59 per cent. of the entire import. It is in the latter country that the higher grades still find their chief support and readiest market. There, during the past year, 51,518 tons of Spanish, out of 60,629, and 46,142 tons Algerian, out of 61,979, were received and passed for consumption into the mills of the Scottish paper makers. Tripoli grass, on the contrary, has never made good its footing North of the Tweed, and continues to find its largest customers in the county of Durham. As compared with the previous year, esparto in the home counties has maintained its level. The Lancashire district exhibits a small increase, but the West of England has fallen to a comparatively insignificant total, and Cardiff, at one time a very important entrepôt, has almost disappeared from view. Chartering during the past year has had its periods of difficulty, and there have been occasional spasms of higher rates and dearth of steamers to disturb the minds and upset the calculations of shippers. The market at the beginning of the year was very bare of all distant enquiries, but bad weather at loading ports and on voyage retarding cargoes, temporary supplies were in request, and spot parcels changed hands to a limited extent. During February and March there was not much spirit in negotiations, and sellers were held back from offering freely by the disparity of prices in the home and foreign markets. Balers and shippers urged caution in making heavy future engagements, and recommended an advance of quotations despite the fact that other circumstances beside the available supply in producing countries controlled the value in the home markets. The opening of the second quarter of the year brought with it a somewhat improved enquiry, and this steadily expanded during May and June, and resulted in the closing of a number of important transactions for future delivery. Prices ruled fairly steady, notwithstanding that many consumers deferred making their usual contracts, and expressed an adverse inclination as to the maintenance of values. As the close of the half-year

approached the falling off of imports necessitated recourse to stock temporary supplies, and holders of stored parcels obtained full delivery of the higher grades, but African values generally were equally affected, and indeed receded slightly. In July activity placed the market to dulness and stagnation. The apprehensions excited by arrivals were allayed by fuller receipts, consumers' stocks were replenished, and with the dying down of demand for stored lot also the enquiry for distant shipments. A revival, however, took place in the succeeding month, and while sellers maintained their attitude of firmness, a slight advance was established in Spanish, and a stronger tone. Scant supplies in September brought about a renewal of uneasiness, both to sellers who had contracted engagements to buyers who were confronted with diminishing stocks. Full cargoes were paid for one or two early cargoes that were free for September and October, and, perhaps, with the exception of Spanish quotations for all positions gained strength and tone. The receipts of African in November more than sustained the improvement in values, and the business done in this and the last month of the year almost invariably ruled in sellers' favour. The invigoration of the market was aided by the generally improved tone in the trade of the country, and the great activity of production exhibited by paper manufacturers.

Quantity (corrected) of esparto and other vegetable fibre manufactured of paper imported into the United Kingdom during the following years:—

| From.             | 1895.<br>Tons. | 1894<br>Tons. | 1893.<br>Tons. | 1892.<br>Tons. |
|-------------------|----------------|---------------|----------------|----------------|
| Spain .....       | 60,629 ..      | 57,177 ..     | 56,297 ..      | 59,883 ..      |
| Algeria .....     | 68,979 ..      | 73,562 ..     | 67,660 ..      | 80,236 ..      |
| Tunis .....       | 11,660 ..      | 14,379 ..     | 17,835 ..      | 21,713 ..      |
| Tripoli.....      | 44,968 ..      | 39,787 ..     | 43,556 ..      | 50,987 ..      |
| Morocco .....     | — ..           | — ..          | — ..           | 75 ..          |
| Other countries.. | 172 ..         | 55 ..         | 102 ..         | 73 ..          |
| Total .....       | 186,408 ..     | 184,960 ..    | 185,450 ..     | 212,967 ..     |

## NICKEL IN 1895.

THE chief use of this metal has continued to be as an alloy in the manufacture of steel, the demand in this direction having sustained the impetus given by the very successful tests of armour plate in nickel-steel in different countries.

The production of nickel in the United States from native ore practically ceased, and nearly or quite all the nickel refined or consumed in America is of Canadian origin. The other sources of supply are the French colony of New Caledonia and Norway, the production of Sweden, which at one time was of some importance, practically ceased. The amount imported into the United States from Canada in the form of matte (to be refined) shows a falling off from the figures being 3,138,400 pounds for 1895, against 4,897,191 pounds in 1894. With the Russian contracts already secured for armour plate manufactures in America and the certainty of increase in the consumption for the same purpose, the demand is sure to be greater, and the lower price makes the metal just so much more available as an alloy with steel. In spite of a rumoured agreement between the French company controlling the New Caledonia supply and the English in America to maintain the price and probably raise it, the low figure of 25 cents in large amounts will tend to extend its use, and recent improvements in refining cheapening very materially, the hitherto treated will tend to keep down the price.—*The American Manufacturer.*

CHEMICAL RECIPES.—We understand that the first edition of the book has been sold out, and that the Atlas Chemical Co., Sunderland, are preparing a second edition of 2,000 copies. This edition we hope, be free from the one or two blemishes we indicated in reviewing the first edition. Judging by the testimonials, the originals of which we have read, the second edition promises to sell as rapidly as the first, and intending purchasers should take steps to avoid disappointment.

INTERESTING DEFINITIONS.—A French paper contains the following interesting lines:—Tennyson could take a worthless sheet of paper and write a poem on it, and make it worth 220,000 francs—that's genius. Vanderbilt can write a few words on a sheet of paper and make it worth 20,000,000 francs—that's capital. The United States can take an ounce and a quarter of gold and stamp upon it an "eagle" and make it worth eighty francs—that's money. A mechanic can take a material worth twenty francs, and make it into watch springs worth 4,000 francs—that's skill. A merchant can take an article worth 75 cents and sell for four francs—that's business. A lad can purchase a seventy-five cent hat, but she prefers one that costs 10 francs—that's foolishness. A ditch-digger works ten hours a day and handles several tons of earth for four francs—that's labour.



## PETROLEUM ACCIDENTS.

THE following interesting correspondence has taken place between Mr. T. Graham Young and the "Lancet." The first letter, being Mr. Young's criticism of the Report of the Lancet Commission on Dangerous Lamps, ran as follows:—

Sir,—I read the report on "Dangerous Paraffin Lamps," which appeared in your issue of 4th January, 1896, and, whilst admiring the trouble and care you have taken to settle such an important public question, I cannot agree with some of your conclusions, and would point out that they are quite at variance with those contained in your report on "Paraffin Oil" which appeared in your issue of 29th March, 1862.

In this latter report you distinctly state, after careful investigation, that 130°F., taken by the old open test, is the lowest point which can be consistent with public safety. Your conclusions are well stated in your issue of 28th June, 1862, when discussing the Bill for the safe keeping of Petroleum which had just passed through committee, and which contained the following clause, "Petroleum for the purpose of this Act shall include any product thereof that gives off an inflammable vapour at a temperature of less than 100°F." They were as follows:—

"No doubt the Government had had the advice of scientific men in fixing upon this standard, and so far the responsibility does not rest upon the proposers of the Bill. Still we maintain that the temperature named in the Bill, namely, 100°F. is wholly insufficient to ensure the safety of the public, and that, if it be not raised, accidents will still constantly be occurring, arising from the use of so volatile and combustible a liquid. The degree of permanent ignition necessary to secure public safety should not be less than 130°F."

In your report, 4th January, 1896, you advocate a point fully 30°F. below 130°F., and argue that, given an oil of a low flash point, the greater the safety from lamp accidents. It runs as follows:—

"We do not think there is any cause for raising the flashing point of oil above its present limit, 100°F., open test. We have indeed obtained distinct evidence that there is an advantage in using oil that is to some extent volatile at this temperature." Later on in the same report, "In the 'Lancet' of March 29th, 1862, it is written that this report revealed the fact in the most convincing and positive manner that much oil then sold in the metropolis was in a dangerous condition to the public. This has since been altered by legislation by the simple remedy suggested by our Commission, viz., the fixing of a standard of inflammability." The fixing of a "standard of inflammability" did not affect the legal flash-point. It was merely a translation of the old open test into the close test, and erred, in the opinion of numbers of scientific men, in allowing oils of a lower flash-point than before to come into use.

If oil of a sufficiently low flash-point at which it would give off an inflammable vapour under ordinary conditions of use, were safer than one with a high flash, then the necessity of a legal flash-point is questionable.

The experiments, detailed in the January 4th report of lamps, seem to distinctly prove that a dangerous oil was used, because when the lamp was broken, the oil, you state, burned furiously, which could not be the case with oil having a flash-point which you advocated in 1862, viz., 130°F., as the point of ignition would be above any temperature which could be reached under any ordinary conditions.

In common with yourself, I wish to sift out the truth of this matter, and would thank you if you would either publish this letter, or give some explanation of the apparent inconsistency in your columns.—Yours truly,

T. GRAHAM YOUNG

In their issue of February 8th, the "Lancet" makes the following reply:—Mr. T. Graham Young writes that he cannot agree with certain of the conclusions contained in the "Lancet" Commission on Dangerous Lamps and asks for some explanation on the apparent inconsistency that in 1862 the "Lancet" Commission upheld 130°F. as the lowest point that should be taken as the flash-point of burning oils, whereas in the recent commission we ventured to express the opinion that there was no cause for raising the flash-point of oil above its present limit, 100°F. open test, which was the standard fixed by the Government in 1862. It should be observed that fifteen out of fifty-three samples examined by the 1862 Commission were below, and in some cases considerably below, the present limit. We expressed this opinion because the experience of a third of a century which has since elapsed has shown that explosions are the exception and not the rule. In other words, the great majority of accidents and disasters, if indeed, not all, have arisen from the lamps being upset. There is not the slightest doubt also that many of the cases reported as explosions were not so in point of fact. The sudden ignition of escaping oil, as with a tilted defective lamp, is certain to convey the impression of an explosion having taken place. This being the evidence of practical experience—and we refer Mr. Young to the official statistics—affords very little argument that the legalised flash-point is an unsafe limit, at any rate as regards ex-

plosions, especially bearing in mind the enormous number of lamps in use compared with the explosions of which we have had any evidence at all of ever having occurred. *We have no experience of the same kind of oil of higher flash-point.* (The italics are ours.—Ed. C.T.J.) We could quote more than one case, however, in which the employment of oils of a flash-point considerably above 100° led to loss of several lives by the overturning of the lamps and the ignition of escaping oil. Mr. Young expresses, further, the opinion that if oil of a sufficiently low flash-point to give off an inflammable vapour under ordinary conditions of use were safer than one with a high flash, then the necessity of a legal flash-point is questionable. We do not think so if we understand the phrase "ordinary condition of use" correctly. We should not like to pour benzene, for example, from one vessel to another in the neighbourhood of a flame, and the public should be protected from the same liabilities in the mere handling of inflammable oils. We very much doubt if the substitution of oil of higher flash-point and used in the same defective lamps as those experimented with would be less free from risk. Whatever may be conjectured, the fact remains that by far the majority of disasters are not due to explosions but to upsets, and the simple device of a wick-tube descending to within a quarter of an inch of the bottom of the reservoir would provide against the occurrence of either contingency. Hence we are brought to the conclusion that improvement in the design and structure of the lamp is now all that is wanted to minimise, if not to reduce altogether, the dangers of paraffin lamps. The handling of gunpowder is not entirely free from risk, but no one would think of firing it in a defective gun-barrel.

## Trade Notes.

**SOCIETY OF CHEMICAL INDUSTRY: London Section.**—The next meeting will be held on March 2nd, at Burlington House at 8 p.m., when a paper will be read by Messrs Cross and Bevan on "Artificial Silk."

**SOCIETY OF CHEMICAL INDUSTRY: Liverpool Section.**—The next meeting will be held on March 4th, at 7.30 p.m., when the following papers will be read:—1. "The Analysis of Chrome Ore and Ferro-Chromium," by Mr. E. H. Saniter. Mr. Saniter will give also a demonstration of his process. 2. "Sulphite Pulp Manufacture in Scandinavia," by Mr. J. Beveridge.

**SOCIETY OF CHEMICAL INDUSTRY: Nottingham Section.**—The fifth meeting of the session will be held at Room 23, University College, on Wednesday, 4th March, at 7.30 p.m. A paper by Mr. L. Archbutt, F.I.C., will describe an evaporation test for cylinder oils, and the following paper is down for discussion: "Some Properties of Ferric Phosphate," by Mr. R. M. Caven, B.Sc.

**NEW PETROLEUM SUPPLIES IN THE CASPIAN SEA.**—The island of Tscheleken, in the Caspian Sea, is found to contain petroleum springs yielding oil resembling the Pennsylvanian product, and very different from that of Baku. The crude oil produces nearly 29% of its volume of kerosene, which burns similarly to American oil, and the higher fractions are rich in vaseline.

**MESSRS W. NEILL AND SON.**—We are informed that the business of this firm will be carried on as before under the same name of "W. Neill and Son." The new partnership consists of Mr. John Swallow and Mr. Edwin Cecil Watkins, who undertake the payment of all accounts, and will receive the assets. Mr. Swallow has been connected with the business for the last three years, and is intimately acquainted with all its requirements. Mr. Watkins served his apprenticeship with Messrs. R. Daglish and Co., of St. Helens.

**INSPECTION OF OIL VESSELS IN THE THAMES.**—Representatives of the Scotch oil trade met privately in Glasgow on Monday, and discussed the proposed list of regulations by the Thames Conservancy Board as to the inspection of oil-laden vessels previous to their entering the London docks. The feeling of the meeting was against the proposed rules, but it was agreed that a committee of Scotch companies should confer with the Thames Conservancy Board on the matter.

**FATAL EXPLOSION.**—A serious explosion occurred last week at the laboratory of Messrs. T. H. Redwood and A. J. M. de Hailes, analytical chemists, 15, Red Lion-square, Holborn. A gentleman named Arthur French St. George had obtained permission to make use of the laboratory to carry out some experiments connected with a patent. He was engaged with a cylinder, the contents of which are unknown, when an explosion occurred, and St. George was killed instantaneously, his head being blown off. An assistant named Thomas Waterworth Glass was badly injured. At the inquest held on Monday, Mr. Alfred de Hailes gave evidence of a very guarded nature, as he did not wish to divulge any particulars that might affect the patent. As Col. Majendi and Dr. Dupré were making investigations which were not completed, the Coroner adjourned the inquiry.



**SALT UNION AND THE CHEMICAL TRADE.**—The chairman of the Salt Union, in addressing the shareholders on Thursday, referred to the competition of the Alkali Union. An offer, he said, had been made by the Salt Union to arrange terms, but without success, and in consequence the Board were seriously thinking of going into the Chemical Trade themselves, and thus carrying the war into the enemy's camp.

**"NIAGARA" PULVERIZER.**—As will be seen from our columns this week, under the heading of New Companies, a syndicate has been formed under the most powerful South African and Australian auspices, to take over the selling rights in the "Niagara" Crusher and Concentrator, which has been attracting so much attention in mining circles. Messrs. Easton, Anderson, and Goolden, Ltd., retain, of course, their exclusive right to manufacture these machines throughout the world, but all enquiries with regard to them should be sent to the "Niagara" Pulverizer, Ltd., 3, Whitehall-place, S.W.

**PERSONAL.**—Mr. L. Mond has been elected President of the Chemical Section of the British Association for next year. Dr. Ludwig Mond, F.R.S., is well known as a distinguished technical chemist. In 1863 he developed what is known as the "Mond process of sulphur recovery from alkali waste," and since that date has devoted himself to the introduction and development of the ammonia-soda process of alkali manufacture into England. He has recently endowed a research laboratory in connection with the Royal Institution, London, thereby completing the original plan of the founders of the institution. Amongst his other scientific contributions to chemistry may be mentioned an important research on volatile compounds of nickel and iron.

**REPORT OF THE CITY ANALYST.**—The annual report of Mr. Sedgwick Saunders, the public analyst for the city, has been submitted to the Commission of Sewers. Dr. Saunders remarks that the hope entertained by public analysts throughout the kingdom, that by this time the Legislature would have effected improvements in the working of the Acts relating to the adulteration of food and drugs, had not been realised. Some attempt had been made in this direction by a Select Committee of the House of Commons, who had taken voluminous but not exhaustive evidence upon the subject. It would be, he says, useless to reiterate the objections resulting from the present anomalous arrangements under which the chemical authorities at Somerset House are enabled to over-ride the decisions of the most eminent analysts upon data they have never formulated, not to dwell further upon the extraordinary and discordant decisions given by magistrates throughout the country, nearly always in favour of the dishonest trader, and more in accordance with the idiosyncrasy of the individual functionary than the requirements of science and common sense. During the year 266 analyses have been made in the city.

**THE PROSPECTS IN COD OIL.**—A good deal of excitement has arisen in the market for cod-liver oil within the last few days, with an important advance of prices. Since the closing week of January unfavourable reports of the fishing season on the Norwegian coast have been received, but until recently these were little regarded, because in former seasons similarly discouraging accounts have often proved to be exaggerated. In the present case, however, the bad reports are beginning to assume consistency and seriousness in the market, and a large business has been done in London this week at prices showing a considerable advance upon those current a month ago. Latest telegrams from Bergen state that the quantity of fish caught is barely one-fourth of the amount taken up to the same date of last year. The deficiency appears to be due partly to scarcity of fish and partly to stormy weather. It is reported, moreover, that the livers are small, and the proportionate yield of oil correspondingly deficient. It is added that prices in Bergen have run up very high—higher indeed than those quoted in London,—and that the stock of last year's oil remaining there has run down to a very low point. The production of Norwegian oil last year was only 12,680 barrels, against 18,500 barrels in 1894, and 26,813 barrels in 1893.

## Market Reports.

### TAR AND AMMONIA PRODUCTS.

Tar products as a whole are steady, Benzols being the only article that shows signs of weakness. For 90's 1s. 11d. to 2s. is now quoted, and 50/90's remain at 1s. 8d. to 1s. 9d. Carbolic acids continue very firm at last week's quotations, and there is also no change in naphthas. Creosote and anthracene are steady. Pitch keeps firm at 35s., f.o.b., East Coast.

Sulphate of ammonia, though easy in price, is steadier. The demand has fallen flat again, but there are buyers at the figures given below. Anything held for more money, however, hangs fire. Beckton is quoted £8. 7s. 6d., London outside makes £8. 7s. 6d., Liverpool and Hull £8. 8s. 9d., Leith £8. 7s. 6d. to £8. 8s. 9d. Forward neglected. Continental advices depressing.

### LIVERPOOL MINERAL MARKET.

The market for minerals has this week been very firm. Many What arrivals there have been are against forward contracts have therefore gone direct into consumption, and have not stocks in any way. The available stocks are practically nil, demand on the other hand is increasing. Ground manganese firm, and meets with an exceptionally good demand at £7. £11., and £13. 10s. per ton. Sulphate of manganese is demand. Manganiferous iron ore: There have been many in for this at advanced prices. Chrome ore is steady. Bauxite demand is increasing, and prices are firm at 20s. per ton for 16s. per ton for second, and 12s. per ton for third quality, in cargoes. French chalk: There have been several arrivals week, but they have been all cleared, and prices are very steady 70s. to 75s., 80s. to 90s., and 100s. to 110s. per ton for "White" brands, according to grade. Wolfram and scheelite: of the higher grade ores are still very low, and there is a tendency to higher prices. Arsenic is very scarce at £20. 1 per ton. Fuller's earth: The demand continues steady at 1 prices—55s. for ground, 75s. for impalpable powder, and 50s. for "Emerald" and other brands. Rottenstone: The demand for qualities continues good at full figures—£8. 10s. to £14. 1 according to grade. Ochres and umbers: There is more inquiry good staining qualities, and business is being done at 60s. to 6 ton for J.C. ochre, and 40s. to 45s. per ton for good quality. Carbonate and sulphate of barytes meet with improved demand full prices. Plumbago: The demand for lubricating and for qualities continues very good at £6. to £10. per ton, according to grade: prime Ceylon is in steady demand at £15. to £20. 1 according to quality. Pumice stone is inquired for, ground being at £6. to £7. per ton, and superior Teneriffe lump at £7. 10s. 1 Bog ore is in fair demand at 22s. 6d. to 25s. per ton. Mag Raw lump and powdered are steady.

### MISCELLANEOUS CHEMICAL MARKET

In the alkali trade business continues moderately brisk in main products. Bleaching powder is in better request for export without change in price, at £7. 5s. hardwoods, f.o.b., and £ woods, f.o.r. makers' works. Caustic soda also continues demand, and prices are steady; subject to usual variations for markets, the spot quotations are:—F. ob., Liverpool, 77%, £9. 74%, £8. 10s.; 70%, £7. 10s.; 60%, £6. 10s. per ton, 10-ton 1 upwards. Ammonia alkali firm, at £3. 7s. 6d., f.o.r., makers' Soda crystals and bicarbonate unchanged. Leblanc ash nominally 1d. to 1½d., f.o.b. For chlorate of potash and soda no change in nominal quotations, but still odd parcels offering concession in makers' prices. Sulphate of copper is in active demand and price firm, at £17. 5s. to £17. 10s., f.o.b. Saltcake steady 25s. to 27s. 6d. for Lancashire and Cheshire. Sulphur quick £3. 12s. 6d. makers' works. Potash, caustic, and carbonate in good request, and prices are firm. Caustic potash, 90%, £2 c.i.f. Carbonate, 90/92%, £17. 10s., c.i.f. In white powdered there is still an extreme scarcity, and £20. has been paid to deliveries, forward sales for some months having been made at £ to £20. Arseniates are, of course, proportionately dearer. Of acetate of lime there are still sellers at £4. 12s. 6d. to £4. 15 grey. £7. 5s. to £7. 10s., c.i.f. Other acetates without change position or value. Carbolic crystals are much inquired for, consequence of the large business already done there is every prospect of a firm market for some time to come. For aniline oil and demand is quiet, but prices are firm. Yellow prussiate of potash at 7½d.; cyanides, 1s. 2½d. For chemicals generally the demand is quiet.

### REPORT ON MANURE MATERIAL.

For the time of year there is very little business passing, and consequently prices are barely maintained. The quotations for phosphates are unchanged. There is fair inquiry, but it does not lead to much business. There is nothing to report in River Plate but the absence of cargoes offering. The nominal value remains 2 per ton, delivered good United Kingdom or Continental. Crushed East Indian bones on spot may be had at £3. 18s. 9d. 1 ex store, and for shipment at 2s. 6d. per ton less. On spot 1 bone meal offers at £3. 15s. per ton, ex quay Liverpool, at same price would do for shipment. Nitrate of soda is firm positions, and a good business has been doing; the delivery February having been unprecedented, spot value of fine quality per cwt., and of ordinary quality 7s. 10½d. per cwt. Due to



ordinary quality, are worth 7s. 10½d. to 8s. per cwt., and for shipment 8s. up to 8s. 4½d. per cwt., according to position, has been paid. Home-prepared dried blood offers at 7s. 6d. per unit, f.o.b. at works.

### THE METAL MARKETS.

LONDON, WEDNESDAY.—Pig iron, firm: Scotch warrants closed at 47s. 2½d.; Middlesbrough, 38s. 3d. cash, and hematite, 48s. 9d. Copper, steady: Chili bars, G. O. B.'s and G. M. B.'s closed at £46. 3s. 9d. to £46. 8s. 9d. cash, and £46. 11s. 3d. to £46. 16s. 3d. three months. Tin, firm: Straits closed at £60. 15s. to £61. 5s. cash, and £61. 5s. to £61. 15s. three months. Australian, £61. 7s. 6d.; English ingots, £64. 10s. Lead, steady: Spanish, £11. 8s. 9d.; English, £11. 10s. to £11. 12s. 6d.; Silesian spelter, ordinary, £14. 16s. 3d. to £15. Nickel, 1s. 2½d. Antimony, £29. 15s. Quicksilver: first hands, £7. 2s. 6d.; second hands, £7. 2s. Copper shares, firmer: Cape, 2½ to 2½; Copiapo, 2½ to 2½; Libiola, 3 to 3¼; Mason and Barry, 2½ to 3½; Rio Tinto, 18½ to 18½; Tharsis, 5 to 5¼.

GLASGOW, WEDNESDAY.—Market easy, with small business. Scotch done at 47s. 4d. and 47s. 3d. cash, also at 47s. 6d. and 47s. 5d. one month; closing with buyers at 47s. 2½d. cash, sellers ask 47s. 3d. Cleveland closes at 38s. 3d. cash; sellers ask 38s. 4d. Cumberland hematite done at 48s. 11½d. and 48s. 10d. cash, also at 49s. 1½d. one month; closing with buyers at 48s. 9d. cash, sellers ask 48s. 9½d. Middlesbrough hematite done at 46s. 2½d. and 46s. 2d. cash; closing with buyers at 46s. 1½d. cash, sellers ask 46s. 2½d.

### LIVERPOOL OIL AND COLOUR MARKET.

WEDNESDAY.

OILS.—Palm oil is quiet and in small demand, sales being few. Lagos has been done at £19. 17s. 6d. ex quay for a small lot. Olive is firm, and there has been a bigger business doing, chiefly in Seville and Malaga, at full prices. There is no change in the price of linseed, which keeps steady at 20s. 6d. to 21s. per cwt. for Liverpool makes in export casks. Cottonseed continues steady, prices for Liverpool refined being well maintained at 17s. 3d. to 17s. 6d. per cwt. Castor oil is firm, and prices are rising: Good seconds Calcutta is now held on spot for 2½d., and first pressure French 2½d. to 2½d. per lb. Tallow is very quiet, but prices remain unaltered. Resin is not in very good demand, but so far holders remain firm at current prices. There is a marked steadiness in spirits of turpentine, for which there is a fairly good inquiry at 21s. 6d. per cwt. Petroleum is quiet and easier, with American at 6½d. to 7½d., and Russian refined 5¼d. per gallon.

COLOURS are steady, without alteration in prices. Ochres: Oxfordshire, common, £10., medium, £12., best, £15. Derbyshire, common, 40s.; medium, 50s., best, 60s.; Welsh, best, 90s., seconds, 50s., and common, 18s.; Irish, Devonshire, 40s. to 45s.; French, J.C., 60s. to 65s.; M.C., 65s. to 67s. 6d. Umber: Turkish quiet; Devonshire, 50s. to 55s. White lead, £16. Red lead unchanged. Venetian red, £6. to £10. Cobalt: Prepared oxide, 9s. 9d.; black, 9s.; blue, 6s. Zaffres: No. 1, 3s. 6d.; No. 2, 2s. 6d. Oxide of iron: Common, £7.; medium, £10.; finest, £20. Zinc oxide, £22. 10s. to £25.

### WEST OF SCOTLAND CHEMICALS.

GLASGOW, TUESDAY.

The market for general chemicals seems to have weakened slightly, and one or two of the lines are marked a fraction lower. There is a notable exception, however, in sulphate of copper, which still rises. Bichromates are steady at the old prices, as held jointly by the Scotch makers in combination. There is talk of an advance in these, and consumers in consequence are keeping themselves in larger stock. The feeling in sulphate of ammonia is again depressed, and the price is down, though not as yet to the very low point lately touched as a record. At the moment £8. 10s. is the highest procurable, and letters from the continent offer but very indifferent prospects ahead, unsold stocks there being unusually large. In the mineral oil and paraffin sections the only change is some little easing off in naphtha, owing to the season. Oils are all pretty firm; solid paraffins still suffer from underselling, but candles are the worst off, being most cut into by competition.

Chief prices current are:—Soda crystals, £2. 2s. 6d., nett, Tyne; soda ash, 48/56°, £3. 15s. to £4. 15s. nett, Tyne; white alkali, 48/52°, £4. 10s. to £5. nett, Tyne; alum in lump, £5. 5s. nett, Glasgow; caustic soda, white, 74° £8. 10s., 70/72° £7. 10s., 60/62° £6. 10s., and cream 60/62° £6. 7s. 6d., all nett, Liverpool; bleaching powder, £6. 5s. to £7. 5s. nett, Tyne; saltcake, 27s. 6d.; borax, English, refined, £20., and boracic acid, £30. nett, Glasgow; bicarbonate of

soda, 5-cwt. casks, £6. 10s., and 1-cwt. casks £6. 15s. nett, Liverpool; bichromate of potash, 4½d. nett, for Scotch and English deliveries (for export, 4½d. nett, f.o.b. Glasgow); bichromate of soda, 3¼d. nett, for Scotch and English deliveries (for export, 3¼d. nett, f.o.b. Glasgow); chlorate of potash, 4½d. less 5%, Liverpool; nitrate of soda, 7s. 10½d. to 8s. 1½d.; sulphate of ammonia, £8. 10s. prompt, f.o.b. Leith; sal ammoniac, first and second white, £39. and £37. nett, any port; sulphate of copper, £17. 5s., less 5%, Liverpool; paraffin scale, hard, 17½d., and soft, 1½d. to 1½d. per lb.; paraffin wax, 120° semi-refined, 2½d. to 2½d.; paraffin spirit (naphtha), 7½d. per gallon; paraffin oil (burning) No. 1, 6½d., and crystal, 6¼d., at works, for Scotch buyers (English sales about ½d. lower); ditto (lubricating) 865° £5., 885° £5. 10s. to £6., and 890/895° £6. to £6. 10s. Week's imports of sugar at Greenock were 15,841 bags beet unrefined and 1,891 bags beet refined.

### TYNE CHEMICAL REPORT.

TUESDAY.

In chemicals there is practically no alteration in prices, and the business doing is largely of a hand-to-mouth nature. Bleaching powder is in a shade better inquiry. Sulphur scarce at £3. 17s. 6d. per ton. Soda crystals, £2. 2s. 6d. per ton, gross weight, locally. With the approach of the spring months the demand generally should improve.

Bleaching powder, softs, £7. 5s. per ton, nett; hards, £7. 10s. per ton, nett; caustic soda, 76/77°, £9. 5s. per ton, nett; do., 70°, £7. 15s. per ton, nett; recovered sulphur, 2 cwt. bags, £3. 17s. 6d. per ton, nett; soda ash, 48%, £3. 15s. per ton, nett; do., 52%, £3. 17s. 6d. per ton, nett; do., 56%, £4. per ton, nett; alkali, 36%, £2. 15s. per ton, nett; white alkali, 48%, £4. 10s. per ton, nett; do., 50%, £4. 15s. per ton, nett; do., 52%, £5. per ton, nett; hyposulphite of soda, 5-7 cwt. casks, £6. 5s. per ton, nett; do., 1 cwt. kegs, £7. per ton, nett; silicate of soda, 75° Tw., £2. 12s. 6d. per ton, nett; do., 100° Tw., £3. per ton, nett; do., 140° Tw., £3. 7s. 6d. per ton, nett; soda crystals, casks, £2. 2s. 6d. per ton, gross weight; do., 2 cwt. bags, £2. 2s. 6d. per ton, nett weight; chlorate of potash, 5d. per lb., less 6%; pearl hardening, £3. per ton, nett; pure white sulphate of alumina, £3. 17s. 6d. per ton, nett; blanc fixe, £7. 5s. per ton, nett; chloride of barium, refined crystals, £6. 15s., per ton, nett; do., 90/95%, crude calcined, £6. per ton, nett; sulphide of barium, crystals, £4. 15s. per ton, nett; carbonate of alumina, £30. per ton, nett; aluminate of soda, £30. per ton, nett.

SALT.—South Durham salt is steady at 9s. per ton, f.o.b. Tees.

COALS.—There is still depression in the trade here, and more particularly in steam coals. Household coals remain dull, the fine open weather lessening the consumption. Coke very steady, with a large local consumption. Prices to-day:—Best Northumbrian steam, 8s. to 8s. 6d. per ton; second qualities, 7s. to 7s. 6d. per ton; small steam, 3s. 6d. to 3s. 9d. per ton; bunker coals, unscreened, 6s. 3d. to 7s. per ton; gas coals, 7s. to 7s. 3d. per ton; household coals, 10s. to 10s. 6d. per ton; coke, firm, at 14s. 6d. to 15s. per ton.

### HULL PAINT, OIL, AND COLOUR REPORT.

TUESDAY.

OILS.—Markets all round easy and inactive. The imports up to date compared against the same time a year ago have been:—Linseed, 77,670 quarters, against 37,977 quarters; rapeseed, 8,046 quarters, against 18,965 quarters; cottonseed, 42,016 tons, against 51,722 tons; olive oil, 4,390 casks, against 1,518 casks; rape oil, 702 casks, against 2,019 casks; oilcakes, 3,698 tons, against 2,445 tons; bones, 1,593 tons, against 1,325 tons; turpentine, 6,167 barrels, against 2,980 barrels. Linseed oil rather easier, spot closing dull at 18s. 9d. naked; at this price there are sellers March-April, whilst May-August offers at 18s. 7½d. and September-December 18s. 6d.; boiled and refined from £1. to £2. per ton extra. Export for the week, 960 cwt. Refined cotton oil also makes: Spot, 15s. 1½d. naked, and March-April 15s. 3d. to 15s. 4½d.; May-August, 16s.; barrels £1. 10s. and casks £1. per ton extra. Export of refined has been 6,420 cwt. Olive oil, plentiful and low in value, from £29. upwards. Turpentine unchanged. Boiled siccativ oil, £13. per ton. Castor oil from 2½d. per lb. Herring oil, £14. Cod oil from £16. to £19. per ton. Neutral liquid soap, £14. per ton. Sperm oil, £23. Mineral oil continues at the higher rates. Locomotive grease, £12. per ton.

CAKES.—A firm tone all round. Linseed cakes: 95% pure, £6. 10s.; Russians, £5. 17s. 6d. Oil cakes, £5. 10s. Cotton cakes: Best makes, £3. 12s. 6d. to £3. 13s. 9d.; seconds, £3. 8s. 9d. Rape cakes: Black Sea, £2. 6s. 8d.; East India, £3. 7s. 6d. per ton.

PAINTS.—Prices are:—White lead, £16. 10s.; red lead, £14. 10s.; oxide of zinc unchanged; dry red oxide from £8. per ton; venetian red, £4.; yellow ochre, £4. upwards; vermilionette, 5d. per



lb. upwards; ultramarine, 3d. per lb. upwards; lime blue, 16s.; black, blue, red oxide, venetian red, green, and yellow ochre paints from £11. per ton; linseed oil putty from 8s. 6d. per cwt.; paint remover, 25s. per cwt.; ready-mixed paints, in lever tins, from £24. per ton; black varnish, £5. 10s. per ton, in barrels free; oak varnish from 5s. 6d. per gallon

## New Companies.

**Niagara Pulverizer, Ltd.**—CAPITAL, £30,000., in £1. shares. This company has been formed to enter into an agreement with Messrs. Easton, Anderson, and Goolden, and to manufacture and sell Coward's Patent Niagara Pulverizer. The subscribers to the memorandum of association are:—E. W. Tompson, 99, Cannon-street, E.C., Esq.; H. M. Peel, Swansea, iron merchant; N. R. Hill, 99, Cannon-street, E.C., merchant; H. K. Burgess, 3, Whitehall-place, S.W., solicitor; H. Smith, 3, Lombard-street, E.C., merchant; E. E. Sawyer, Hill House, Woking, engineer; H. E. Golding, 99, Cannon-street, E.C., solicitor.

**Bootle Tanning Company, L'd.**—CAPITAL, £30,000., in shares. This company has been formed to acquire the business of tanners, glue, and size manufacturers from the executors of the Johnstone. The subscribers to the memorandum of association are:—G. Randall, 32, Field-lane, Litherland, tanner; S. Cooke, 5, C. road, Burnley, oil merchant; H. Hughes, The Mount, Penketh, man; T. Wilson, Kimberley-street, Liverpool, clerk; F. Hugh Ivanhoe-street, Bootle, tanner; P. Hughes, 14, Mellor-street, worth, tanner; W. Hughes, Pine-terrace, Stockton Heath, clerk.

**Central Compressed Gas Works.**—CAPITAL, £6,000., shares. This company has been formed to acquire and carry business of compressed gas manufacturers, now carried on by Messrs. J. Fennessy and R. Chapman, as Leonard Chapman and Co. subscribers to the memorandum of association are:—R. J. Fe 50, Old Broad-street, E.C., secretary; W. L. Hunt, 3, Winchester street, E.C., secretary; L. Chapman, 14, Flodde S.E., engineer; C. W. James, 25, Avington-grove, Penge, C. T. Bullough, 3, Ballater-road, Brixton, engineer; A. Troll, 240 road, Islington, clerk; V. Collier, 66, Josephine-avenue, B bookkeeper.

## IMPORTS OF CHEMICAL PRODUCTS

### THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

#### LONDON.

Week ending February 15th.

|                          |                         |  |
|--------------------------|-------------------------|--|
| <b>Acetate of Lime</b> — |                         |  |
| U. States, 779 pks.      | Johnson & Hooper        |  |
| " 1,474                  | H. Wallace & Co.        |  |
| <b>Acetic Acid</b> —     |                         |  |
| Holland, 15 pks.         | Beresford & Co.         |  |
| <b>Acetone</b> —         |                         |  |
| Germany, 11 pks.         | Chilworth Gunpowder Co. |  |
| <b>Alkali</b> —          |                         |  |
| Belgium, 230 c.          | J. Harrison             |  |
| France, 120              | J. Barber & Co.         |  |
| <b>Anthracene</b> —      |                         |  |
| Spain, 453 pks.          | Burt, Boulton & Co.     |  |
| <b>Antimony</b> —        |                         |  |
| Australia, 8 t.          | H. Bath & Son           |  |
| <b>Antimony Ore</b> —    |                         |  |
| Portugal, 50 t.          | J. Bamber               |  |
| <b>Asbestos</b> —        |                         |  |
| Germany, 8 pks.          | Craven & Co.            |  |
| U. States, £144          | Furness, Withy & Co.    |  |
| <b>Barium Chloride</b> — |                         |  |
| Germany, 23 pks.         | Petri Bros.             |  |
| <b>Barytes</b> —         |                         |  |
| Holland, 57 cks.         | D. Storer & Sons        |  |
| " 207                    | J. L. Lyon & Co.        |  |
| Belgium, 90              | "                       |  |
| Holland, 71              | R. Bew                  |  |
| <b>Bromide of Iron</b> — |                         |  |
| Germany, 22 pks.         | A. & M. Zimmermann      |  |
| <b>Caoutchouc</b> —      |                         |  |
| Rangoon, 21 c.           | Arracan Co., Ld.        |  |
| Zanzibar, 57             | L. & I. D. Jt. Co.      |  |
| Rangoon, 11              | "                       |  |
| Germany, 26 bis.         | Williams, Torrey & Co.  |  |
| Mozambique, 8            | S. Figgis & Co.         |  |
| Penang, 48               | Prop. Bull Wf.          |  |
| Singapore, 1,245         | Williams, Torrey & Co.  |  |
| Madagascar, 92           | Procter Bros.           |  |
| " 89                     | L. & I. D. Jt. Co.      |  |
| Zanzibar, 3              | Arbuthnot, Ewart & Co.  |  |
| France, 30               | Chautard & Christensen  |  |
| Madagascar, 6            | J. T. Morton            |  |
| " 97                     | Wainwright Bros.        |  |
| Penang, 302              | E. Boustead & Co.       |  |
| U. States, 56            | Prop. Bull Wf.          |  |
| <b>Carbolic Acid</b> —   |                         |  |
| Holland, 25 cks.         | J. Owen                 |  |
| Germany, 37 pks.         | H. Lambert              |  |
| <b>Castor Oil</b> —      |                         |  |
| France, 30 brls.         | W. T. Mills             |  |
| " 10                     | Beresford & Co.         |  |
| " 20                     | Anderson                |  |
| " 30                     | Weber & Smith           |  |
| " 30                     | Lucas & Spencer's       |  |
| E. Indies, 115 cks.      | Ross & Deering          |  |
| Belgium, 30              | R. G. Hall & Co.        |  |

|                          |                                     |  |
|--------------------------|-------------------------------------|--|
| <b>Caustic Potash</b> —  |                                     |  |
| Belgium, 16 pks.         | Petri Bros.                         |  |
| <b>Caustic Soda</b> —    |                                     |  |
| France, 175 c.           | Ross & Deering                      |  |
| Holland, £18             | F. Boehm A. & M. Zimmermann         |  |
| " 18                     | "                                   |  |
| Germany, 32 cs. 7 cks.   | T. H. Lee                           |  |
| " 27 58 pks.             | L. & I. D. Jt. Co.                  |  |
| " 17                     | "                                   |  |
| Belgium, 5               | Craven & Co.                        |  |
| " 5                      | O. Scholzig                         |  |
| " 3                      | T. Palmer                           |  |
| Holland, 4               | Chemical Works, late H. & E. Albert |  |
| " 48                     | G. Rahn & Co.                       |  |
| " 15                     | Beresford & Co.                     |  |
| Belgium, 8               | J. Harrison                         |  |
| Germany, 6               | H. Lambert                          |  |
| <b>Copperas</b> —        |                                     |  |
| Germany, 2 pks.          | A. & M. Zimmermann                  |  |
| <b>Cream of Tartar</b> — |                                     |  |
| Spain, 13 pks.           | E. & T. Pink                        |  |
| Holland, 20              | Kirkpatrick & Co.                   |  |
| France, 6                | C. Atkins & Nibbet                  |  |
| " 15                     | B. & F. Wf. Co.                     |  |
| " 2                      | Ross & Deering                      |  |
| " 5                      | W. C. Bacon & Co.                   |  |
| Spain, 5                 | "                                   |  |
| " 15                     | B. & F. Wf. Co.                     |  |
| " 5                      | F. C. Devon & Co.                   |  |
| " 5                      | W. Caudey & Co.                     |  |
| France, 5                | M. Ashty, Ld.                       |  |
| <b>Dextrine</b> —        |                                     |  |
| Germany, 50 bgs.         | M. D. Co.                           |  |
| Holland, 200             | Carey & Sons                        |  |
| Germany, 300 pks.        | W. Balchin                          |  |
| <b>Dyestuffs</b> —       |                                     |  |
| <b>Argols</b>            |                                     |  |
| Italy, 1,128 pks.        | B. Jacob & Sons                     |  |
| " 162                    | Thames S. T. & L. Co., Ld.          |  |
| <b>Cochineal</b>         |                                     |  |
| Canaries, 4 pks.         | Swanston & Co.                      |  |
| <b>Cutch</b>             |                                     |  |
| Singapore, 9 pks.        | R. & J. Henderson                   |  |
| Rangoon, 100             | Malcolm, Kearton & Co.              |  |
| " 200                    | Hoare, Wilson & Co.                 |  |
| " 350                    | H. A. Litchfield                    |  |
| " 150                    | R. G. Hall & Co.                    |  |
| " 850                    | A. Howden & Co.                     |  |
| " 500                    | W. A. Smith                         |  |
| " 950                    | Leach & Co.                         |  |
| Singapore, 50            | Borneo Co.                          |  |
| <b>Extracts</b>          |                                     |  |
| France, 50 cks.          | L. J. Levinstein & Sons             |  |
| U. States, 5 pks.        | L. & I. D. Jt. Co.                  |  |
| France, 50               | Frankenstein & Co.                  |  |
| " 100                    | T. H. Lee                           |  |
| " 20                     | Union L. Co.                        |  |
| <b>Gambier</b>           |                                     |  |
| Singapore, 462 pks.      | C. S. Cox & Co.                     |  |
| " 127                    | Ross & Deering                      |  |
| " 859                    | P. & O. Co.                         |  |
| " 457                    | Beresford & Co.                     |  |

|                                     |                         |  |
|-------------------------------------|-------------------------|--|
| " 479                               | Brown & Elmslie         |  |
| " 2,370                             | R. & J. Henderson       |  |
| " 234                               | Union L. Co.            |  |
| " 223                               | J. Greig                |  |
| " 1,860                             | Brinkmann & Co.         |  |
| <b>Indigo</b>                       |                         |  |
| E. Indies, 415 cts.                 | Ross & Deering          |  |
| " 50                                | Wallace Bros.           |  |
| " 87                                | F. Huth & Co.           |  |
| " 116                               | P. & O. Co.             |  |
| Ceylon, 16                          | L. & I. D. Jt. Co.      |  |
| E. Indies, 12                       | Arbuthnot, Latham & Co. |  |
| " 205                               | Elkan & Co.             |  |
| " 20                                | Walker, Munzie & Co.    |  |
| " 24                                | Heilgers & Co.          |  |
| " 33                                | Stutz & Co.             |  |
| " 58 pks.                           | Williams, Torrey & Co.  |  |
| " 61                                | F. Claydon & Co.        |  |
| " 41                                | R. von Glehn & Sons     |  |
| " 59                                | Croysdale & Co.         |  |
| " 92                                | P. Macfadyen & Co.      |  |
| " 40                                | Ralli Bros.             |  |
| " 138                               | Darling Bros.           |  |
| " 19                                | Haefner, Hilpert & Co.  |  |
| " 180                               | G. Rahn & Co.           |  |
| Germany, 10 stris.                  | L. & I. D. Jt. Co.      |  |
| E. Indies, 6                        | Dipnall & Co.           |  |
| " 69 pks.                           | A. B. Curtis            |  |
| " 250                               | H. J. Perlbach & Co.    |  |
| " 112                               | G. S. N. Co.            |  |
| " 298                               | L. & I. D. Jt. Co.      |  |
| " 21                                | J. Kenyon & Sons        |  |
| " 36                                | Parry & Co.             |  |
| " 46                                | Union L. Co.            |  |
| " 5                                 | Phillips & Graves       |  |
| " 16                                | Seton-Laing & Co.       |  |
| " 10                                | Parsons & Keith         |  |
| " 20                                | Thomasset & Co.         |  |
| " 3                                 | J. Kenyon & Sons        |  |
| " 21                                | Patry and Pasteur       |  |
| <b>Myrabolams</b>                   |                         |  |
| E. Indies, 534 pks.                 | L. & I. D. Jt. Co.      |  |
| " 1,058                             | H. A. Litchfield & Co.  |  |
| " 965                               | Marshall & French       |  |
| " 350                               | Darling Bros.           |  |
| <b>Saffron</b>                      |                         |  |
| France, 1 pk.                       | Stockwell & Co.         |  |
| <b>Shumac</b>                       |                         |  |
| Italy, 100 pks.                     | A. Laming & Co.         |  |
| " 1,000                             | J. Kitchen              |  |
| " 500                               | Beresford & Co.         |  |
| <b>Turmeric</b>                     |                         |  |
| E. Indies, 500 pks.                 | R. G. Hall & Co.        |  |
| <b>Valonia</b>                      |                         |  |
| A. Turkey, 15 t.                    | A. J. Humphrey          |  |
| " 51                                | C. Scheeps & Co.        |  |
| " 14 c.                             | M. D. Co.               |  |
| Patras, 8                           | P. A. Gavas             |  |
| <b>Dyestuffs (otherwise undes.)</b> |                         |  |
| Ceylon, 3 pks.                      | R. G. Hall & Co.        |  |
| E. Indies, 10                       | G. & H. Green.          |  |
| <b>Farina</b> —                     |                         |  |
| Holland, 50 pks.                    | J. Knill & Co.          |  |

|                              |                     |  |
|------------------------------|---------------------|--|
| France, 20                   | B. & F. Hernu, Perc |  |
| Holland, 4                   | Seaward & Co.       |  |
| " 100                        | Dunlop B.           |  |
| France, 32                   | Bennett S.          |  |
| <b>Glucose</b> —             |                     |  |
| U. States, 750 pks. 750 c.   | G.                  |  |
| " 250                        | 250 C.              |  |
| " 50                         | 221 Keille          |  |
| " 100                        | 660 D               |  |
| E. Indies, 150               | 900 E. & F.         |  |
| " 100                        | 600 T. J.           |  |
| Germany, 300                 | 320 Baxter          |  |
| U. States, 250               | 1,900 Uni           |  |
| " 50                         | 320 L. N.           |  |
| " 75                         | 470 Page            |  |
| Germany, 25                  | 702 D               |  |
| France, 200                  | 200 Barrett         |  |
| U. States, 5,950             | 12,395 R.           |  |
| " 1,900                      | 1,900 L. & C.       |  |
| " 750                        | 750 )               |  |
| " 500                        | 500 )               |  |
| " 250                        | 250 Morto           |  |
| " 250                        | 250 Trier           |  |
| <b>Glue</b> —                |                     |  |
| " 61,123                     | "                   |  |
| <b>Litharge</b> —            |                     |  |
| Germany, 3 cks.              | H.                  |  |
| <b>Magnesium</b> —           |                     |  |
| Germany, 2 pks.              | D. W. Gre           |  |
| <b>Manure</b> —              |                     |  |
| Morocco, 27 t.               | A. & W.             |  |
| Holland, 180                 | Odams & Co.         |  |
| " 20                         | Chemia              |  |
| " 20                         | (Late H. & E.       |  |
| Belgium, 16                  | "                   |  |
| E. Indies, 330               | A. Hunt             |  |
| " 56                         | Co-op. Ligh         |  |
| France, 210                  | A. Hunt             |  |
| <b>Methyl Alcohol</b> —      |                     |  |
| Germany, 13 cks.             | S                   |  |
| Belgium, 10 dms.             | F. V                |  |
| <b>Molasses</b> —            |                     |  |
| U. States, 250 cks. 1,373 c. | J. N                |  |
| " 50                         | 275 E. & D          |  |
| " 100                        | 550 D               |  |
| <b>Naphtha</b> —             |                     |  |
| Spain, 157 brls.             | Burt,               |  |
| <b>Nitre</b> —               |                     |  |
| Chile, 15 353 bgs.           | W. Mon              |  |
| <b>Ochre</b> —               |                     |  |
| France, 22 brls.             | W. O. F             |  |
| Holland, 4 cks. 4 pks.       | Ph                  |  |
| France, 56                   | B. & F.             |  |



**Plumbago**—  
Italy, 100 bgs. J. Thredder, Son,  
& Co.  
Ceylon, 96 cks. Williams, Torrey,  
& Co.  
" 68 R. G. Hall & Co.  
" 100 Doulton & Co.  
" 73 J. Thredder, Son,  
& Co.

**Potash**—  
Germany, 10 pks. H. Lambert  
**Potassium Bicarbonate**—  
Holland, 16 pks. A. & M. Zimmermann

**Potassium Carbonate**—  
Germany, 100 c. Petri Brs.  
" 20 M. D. Co.  
" 623 W. G. Blagden  
France, 100 Petri Brs.

**Pumice Stone**—  
Italy, 7 t. 10 c. Stobbs, Wilson,  
& Co.  
" 1 M. Criscuolo  
" 17 O'Hara & Hoar

**Quicksilver**—  
Spain, 420,000 lbs. N. M. Rothschild  
& Son  
N. Russia, 9,180 L. & I. D. Jt. Co.

**Rosin**—  
U. States, 3,348 brls. Prod. Brokers' Co.  
" 9,000 F. & S. Chiesman  
& Co.

**Saltpetre**—  
Germany, 50 bgs. 20 cks. P. Hecker  
& Co.  
" 42 J. Hall & Co.  
Belgium, 85 J. Greig  
Germany, 54 L. & I. Dk. Co.  
E. Indies, 2,122 Lucas & Spencer's Wf.  
Germany, 20 T. H. Lee  
" 500 C. Whimble & Co.  
Holland, 7 cks. W. & S. Bowditch

**Sodium Acetate**—  
France, 27 pks. H. Lorenz

**Sodium Hyposulphate**—  
Germany, 126 pks. F. Boehm

**Starch**—  
Belgium, 150 pks. A. B. Curtis & Co.  
" 40 F. Clayton & Co.  
" 200 Taylor Brs.  
France, 40 W. E. Cole  
U. States, 264 Beck & Pollitzer  
Germany, 400 Horne & Co.  
Belgium, 370 T. H. Lee  
" 80 Leach & Co.  
" 280 Fellows, Morton, & Co.  
Holland, 530 A. Starck  
" 125 Philipps & Graves  
" 167 Little & Johnston  
" 232 T. H. Lee

**Stearine**—  
France, 100 bgs. 126 pks. H. Hill &  
Sons  
" 100 G. Boor & Co.  
" 120 sks. Walbaum & Tosetti  
Belgium, 16 cks. H. Hill & Sons  
France, 50 pks. Beck & Pollitzer

**Sulphur**—  
Italy, 16 t. G. Boor & Co.  
" 900 W. C. Bacon & Co.  
" 50 C. Tennant, Sons,  
& Co.  
" 10 Parbury & Co.  
" 3 F. Smith

**Tar**—  
Germany, 10 cks. Linck, Moeller,  
& Co.

**Tartaric Acid**—  
Holland, 6 pks. B. & F. Wf. Co.  
France, 27 "

**Tartars**—  
Italy, 13 pks. Howards & Sons  
" 9 B. Jacob & Sons

**Ultramarine**—  
Germany, 12 cs. Steinhoff, Sons,  
& Co.  
Holland, 4 cks. J. Barber & Co.  
" 10 cs. Hernu, Peron, & Co.  
Singapore, 7 L. & I. D. Jt. Co.  
France, 1 pk. Flageollet & Co.  
" 2 Hernu, Peron, & Co.

**White Lead**—  
France, 20 cks. J. Watt & Son  
Holland, 8 A. & M. Zimmermann  
" 20 S. H. Willoughby  
France, 5 Mory & Co.  
Belgium, 20 Perkies & Homer  
" 16 J. L. Lyon & Co.  
Holland, 12 J. Barber & Co.

**Wood Pulp**—  
Sweden, 262 pks. W. G. Taylor & Co.

Norway, 1,080 Moreton Cox Brs.  
" 150 M. G. Shammes  
" 3,560 A. H. Keep  
Sweden, 2,990 Tough & Henderson  
Germany, 102 Ross & Deering  
" 50 H. E. Everett

**Zinc Oxide**—  
Sydney, 1,206 cks. J. Greig  
Holland, 50 M. Ashby, Ltd.  
U. States, 100 brls. H. Lambert  
Germany, 4 cs. M. Ashby, Ltd.  
" 50 cks.

**LIVERPOOL.**  
Week ending February 13th.

**Albumen**—  
Hamburg, 1 cs. 1 ck.

**Aniline Colours**—  
Rouen, 19 cks. 6 cs. T.  
Edwards & Co.

**Arachide Oil**—  
Antwerp, 8 cks.

**Asbestos**—  
Hamburg, 15 bls.  
Genoa, 1 cs. Pacific S. Nav.  
Co.

**Barytes**—  
Antwerp, 50 bgs.  
Rotterdam, 45 cks.

**Bone Meal**—  
Bombay, 10,627 bgs.  
Karachi, 2,500 Ralli Brs.

**Borate of Lime**—  
Antofagasta, 119 bgs.

**Borax**—  
Galveston, 204 t.  
Valparaiso, 561 bgs. A. & S.  
Henry & Co.

Leghorn, 897  
95 cks.

**Caoutchouc**—  
Havre, 491 pks. Cunard S. S.  
Co., Ltd.

**Castor Oil**—  
Marseilles, 60 cks.

**Chemicals (otherwise undescribed)**  
Hamburg, 13 cks. 2 cs.

**Chrome Ore**—  
Sydney, 4,570 bgs. A. Gibbs, Sons  
& Co.

**Colours**—  
Hamburg, 2 cks.

**Cottonseed Oil**—  
N. Orleans, 512 brls.

**Cream of Tartar**—  
Rotterdam, 2 cks.  
Tarragona, 5 pps. Sachse &  
Klemm

Barcelona, 5 pks.  
9 cks.

**Dyestuffs**—  
Argols  
Bordeaux, 44 cks.

**Cochineal**  
Teneriffe, 3 bgs. Canary Islands  
Trading Co.

**Cutch**  
Rouen, 5 cs. T. Edwards  
& Co.

**Extracts**  
New York, 20 brls. 11 bxs. W.  
Bingham

**Fustic**  
Tampico, 12,786 ps.  
" 9,020 Heaven,  
Wedemeyer & Co.

**Logwood**  
Hamburg, 305 bgs.

**Myrabolams**  
Bombay, 1,743 bgs.

**Shumac**  
Palermo, 400 bgs.

**Valonia**  
Patras, 511 bgs.  
Drogeneste, 2,500 Papayanni &  
Jeremias

Syria, 343 L. J. Vonzon-  
nards  
" 243 Barff & Co.

**Farina**—  
Fiume, 200 bgs.

**Glucose**—  
New York, 900 brls.  
Hamburg, 16 cks.  
Boston, 200

**Glue**—  
Rotterdam, 14 cks. 40 cs. 30 bgs.  
St. Nazaire, 1 sk.

**Lead Nitrate**—  
Genoa, 3 brls.

**Lioseed Oil**—  
Ghent, 60 cks. J. T. Fletcher  
& Co.

**Manganese Ore**—  
Coquimbo, 1,000 t.  
Huelva, 860 Darwen &  
Mostyn Iron Co.

Poti, 2,450  
**Manganese Oxide**—  
Hamburg, 1 ck.

**Manure**—  
Sydney, 3,517 bgs.

**Minium**—  
Rotterdam, 5 cks.

**Paraffin Scale**—  
Baltimore, 200 brls.

**Paraffin Wax**—  
New York, 10 cs. Matheson & Co.

**Potashes**—  
San Francisco, 137 sks. Oetling  
Gebroder

**Pyrites**—  
Huelva, 4,838 t. Matheson  
& Co.

**Rosin**—  
New York, 252 brls.  
Boston, 1,201  
Brunswick, Ga., 2,918

**Saltpetre**—  
Hamburg, 1 ck. 80 kgs.

**Soap**—  
Marseilles, 1,250 cs. Pascal,  
Dudebat & Co.

New York, 6 J. & L. Briggs  
30 J. C. Plimpton  
& Co.

Leghorn, 400 bxs. Weaver &  
Sterry

**Starch**—  
Antwerp, 237 cs. J. T. Fletcher  
& Co.

New York, 300 bgs. T. M. Duche  
& Sons

Amsterdam, 40 bxs.  
Boston, 400  
Baltimore, 400 sks.  
Rio de Janeiro, 10 bls. W. Hope  
Kirk

New York, 100  
**Stearine**—  
Antwerp, 30 bxs.  
Boston, 345 brls.

**Sulphur**—  
Catania 25 cks. 100 t. 320 bgs. 230 brls.

**Tallow**—  
Sydney, 861 cks. Lever Brs.,  
Ld.

Boston, 65 tcs. H. A. Lane  
& Co.

New York, 100 hds.

**Tartar**—  
Bordeaux, 20 cks.

**Tartaric Acid**—  
Rotterdam, 4 cks.

**Ultramarine**—  
Rotterdam, 20 cks.

**Verdigris**—  
Bordeaux, 4 cks.

**White Lead**—  
Rotterdam, 42 cks. 11 cs.  
Ghent, 16 brls.

**Wood Pulp**—  
Rotterdam, 304 bls.

**Zinc Oxide**—  
New York, 80 brls.

**MANCHESTER.**  
Week ending February 15th.

**Aniline Colours**—  
Rotterdam, 9 cks. 1 cs.

**Aniline Oil**—  
Rotterdam, 5 cks. 12 brls.

**Antimony**—  
Trepot, 2 cks.

**Antimony Salts**—  
Rotterdam, 15 cks.

**Chemicals (otherwise undescribed)**  
Rotterdam, 10 cs.

**Colours**—  
Hamburg, 8 cks. 20 bgs.  
Rotterdam, 14 31 cs. 37 bxs.  
139 brls.  
Trepot, 2 1

**Dyestuffs**—  
Alizarine  
Rotterdam, 55 cks.

**Extracts**  
Trepot, 48 cks.

**Shumac**  
Palermo, 340 bgs. 879 bls.

**Farina**—  
New York, 403 bgs.

**Gelatine**—  
Rouen, 10 cs.

**Glue**—  
Fiume, 2 cks.  
Rotterdam, 200 bgs. 2 cs.  
Hamburg, 40  
Rouen, 26 cks. 29 bls.  
Trepot, 61

**Limestone**—  
Antwerp, 4 crts. 2 cs.

**Mineral White**—  
Fiume, 910 bgs.

**Ochre**—  
Trepot, 77 cks.

**Pitch**—  
Rotterdam, 11 cks.

**Potash**—  
Antwerp, 2 cks.  
Trepot, 17 21 dms.

**Pumice Stone**—  
Palermo, 30 bgs.  
Leghorn, 100 brls.

**Salt**—  
Hamburg, 5 cks. 8 cs.

**Saltpetre**—  
Hamburg, 1 ck.

**Soap**—  
Trepot, 2 cks.

**Soda**—  
Rotterdam, 40 brls.

**Sodium Nitrate**—  
Rotterdam, 36 cks.

**Starch**—  
New York, 549 bgs. T. M. Duché  
& Sons

Antwerp, 190 cs.  
Hamburg, 10  
Rotterdam, 55

**Stearine**—  
Rotterdam, 13 bls.

**Tallow**—  
New York, 200 tcs. Co-op. Society.

**Tar Salts**—  
Hamburg, 7 cks.

**Tartar**—  
Hamburg, 10 cks.

**Tartaric Acid**—  
Rotterdam, 16 cks.

**Ultramarine**—  
Rotterdam, 8 cks.

**Zinc Oxide**—  
Rotterdam, 195 brls.

**Zinc White**—  
Rotterdam, 10 cks.

**HULL.**  
Week ending February 15th.

**Acid**—  
Leghorn, 25 cks. Wilson,  
Sons, & Co., Ltd.

**Asbestos**—  
Rotterdam, 5 bls. Hutchinson  
& Son

**Barytes**—  
Rotterdam, 24 cks. W. & C. L.  
Ringrose

" 36 50 bgs.  
Hutchinson & Son

Antwerp, 193 Bailey & Leatham  
Bremen, 10

**Camphor**—  
Hamburg, 6 cks. Wilson,  
Sons, & Co., Ltd.

" 1 brl

**Chemicals (otherwise undescribed)**  
Hamburg, 68 cks. 5 cs. Wilson,  
Sons, & Co., Ltd.

Antwerp, 12 pks. Hutchinson  
Rotterdam, 7 cks. & Son

" 1 W. & C. L. Ringrose  
Bremen, 10 cs. Veltmann & Co.

**China Clay**—  
Rotterdam, 118 bgs. Hutchinson  
& Son

**Cod Oil**—  
Aalesund, 10 brls. Wilson,  
Sons, & Co., Ltd.



|                        |                       |                             |                                   |                                |                           |                                   |                            |                               |                                          |                       |                |
|------------------------|-----------------------|-----------------------------|-----------------------------------|--------------------------------|---------------------------|-----------------------------------|----------------------------|-------------------------------|------------------------------------------|-----------------------|----------------|
| <b>Colours—</b>        |                       |                             | <b>Sodium Nitrate—</b>            |                                |                           | <b>Farina—</b>                    |                            |                               | <b>Soap—</b>                             |                       |                |
| Amsterdam,             | 4 cks.                | W. & C. L. Ringrose         | Antofagasta,                      | 7,595 bgs.                     | Nichs. Waterhouse, & Sons | Hamburg,                          | 100 bgs.                   |                               | Rotterdam,                               | 2 cs.                 | Tyne S. S. Co. |
| "                      | 1                     | Hutchinson & Son            | "                                 |                                |                           | Delfzyl,                          | 22 1/2                     |                               | <b>Soda—</b>                             |                       |                |
| Rotterdam,             | 4                     | Bailey & Leatham            | <b>Starch—</b>                    |                                |                           | Rouen,                            | 10 cs.                     |                               | Rotterdam,                               | 40 brls.              | Tyne S. S. Co. |
| Antwerp,               | 28 pks.               | Wilson, Sons, & Co., Ld.    | Antwerp,                          | 40 cs.                         | Farley & Co.              | <b>Glucose—</b>                   |                            |                               | <b>Sodium Nitrate—</b>                   |                       |                |
| "                      |                       |                             | Bremen,                           | 160                            | Bailey & Leatham          | Philadelphia,                     | 250 brls.                  |                               | Iquique,                                 | 8,662 bgs.            | Scott Bros.    |
| Hamburg,               | 1 cs.                 | Bailey & Leatham            | <b>Stearine—</b>                  |                                |                           | New York,                         | 415                        |                               | <b>Starch—</b>                           |                       |                |
| Rotterdam,             | 29 cks.               | 32 pks. W. & C. L. Ringrose | Antwerp,                          | 13 bgs.                        | Bailey & Leatham          | <b>Glue—</b>                      |                            |                               | Rotterdam,                               | 150 c. 20 cs.         | Tyne S. S. Co. |
| Bremen,                | 24 cs.                | C. L. Ringrose              | Bordeaux,                         | 100                            | Rawson & Robinson         | Boston,                           | 5 brls.                    |                               | <b>Wood Pulp—</b>                        |                       |                |
| Ghent,                 | 2 brls.               | Veltmann & Co.              | Hamburg,                          | 36 brls.                       | H. F. Pudsey              | Antwerp,                          | 4 cks. 3 bgs.              |                               | Holmestrand,                             | 1,000 bls.            |                |
| Stettin,               | 2 cks.                | Wilson, Sons, & Co., Ld.    | <b>Tartar—</b>                    |                                |                           | Rouen,                            | 2 49 pks.                  |                               | <b>Zinc White—</b>                       |                       |                |
| Hamburg,               | 8 cs.                 |                             | Naples,                           | 20 cks.                        | Wilson, Sons, & Co., Ld.  | <b>Lead Acetate—</b>              |                            |                               | Rotterdam,                               | 100 cks.              | Tyne S. S. Co. |
| <b>Dyestuffs—</b>      |                       |                             | <b>Tartaric Acid—</b>             |                                |                           | Hamburg,                          | 15 cks.                    |                               | <b>GOOLE.</b>                            |                       |                |
| <b>Alizarine</b>       |                       |                             | Rotterdam,                        | 2 cks.                         | Hutchinson & Son          | <b>Minium—</b>                    |                            |                               | <i>Week ending February 12th.</i>        |                       |                |
| Rotterdam,             | 149 cks.              | W. & C. L. Ringrose         | <b>Treacle—</b>                   |                                |                           | Rotterdam,                        | 16 cks.                    | J. Rankine & Son              | <b>Acetic Acid—</b>                      |                       |                |
| <b>Madder</b>          |                       |                             | New York,                         | 475 brls.                      | Wilson, Sons, & Co., Ld.  | <b>Potash—</b>                    |                            | J. Rankine & Son              | Rotterdam,                               | 5 cks.                |                |
| <b>Shumac</b>          |                       |                             | <b>Turpentine—</b>                |                                |                           | Rotterdam,                        | 61 cks.                    | J. Rankine & Son              | <b>Alizarine—</b>                        |                       |                |
| Trieste,               | 750 pks.              | Wilson, Sons, & Co., Ld.    | Savannah,                         | 2,000 brls.                    |                           | <b>Pumice Stone—</b>              |                            |                               | Rotterdam,                               | 97 brls.              | 1 cs.          |
| Palermo,               | 614 bls.              | "                           | <b>Ultramarine—</b>               |                                |                           | Messina,                          | 121 bgs.                   |                               | <b>Alkali—</b>                           |                       |                |
| "                      | 50 bgs.               | "                           | Amsterdam,                        | 2 cks.                         | W. & C. L. Ringrose       | <b>Rosin</b>                      |                            |                               | Calais,                                  | 11 cks.               |                |
| <b>Valonia</b>         |                       |                             | Rotterdam,                        | 5                              | Hutchinson & Son          | New York,                         | 1,913 brls.                |                               | <b>Antimony Sulphide—</b>                |                       |                |
| Smyrna,                | 81 t.                 |                             | <b>Waste Salt—</b>                |                                |                           | <b>Soap—</b>                      |                            |                               | Boulogne,                                | 3 cks.                |                |
| <b>Farina—</b>         |                       |                             | Hamburg,                          | 207 bgs.                       |                           | Seville,                          | 1 cs.                      |                               | <b>Caoutchouc—</b>                       |                       |                |
| Antwerp,               | 25 bgs.               | Wilson, Sons, & Co., Ld.    | <b>White Lead—</b>                |                                |                           | <b>Sodium Nitrate—</b>            |                            |                               | Boulogne,                                | 6 cks.                |                |
| Harlingen,             | 1 W. & C. L. Ringrose |                             | Dunkirk,                          | 10 cks.                        | Wilson, Sons, & Co., Ld.  | Rotterdam,                        | 4 cks.                     | J. Rankine & Son              | <b>Colours—</b>                          |                       |                |
| Ghent,                 | 188 pks.              | Wilson, Sons, & Co., Ld.    | Rotterdam,                        | 55                             | W. & C. L. Ringrose       | Hamburg,                          | 730 bgs.                   |                               | Ghent,                                   | 20 cks. 4 cs. 16 kgs. |                |
| Stettin,               | 200 bgs.              | "                           | Amsterdam,                        | 66                             | Hutchinson & Son          | <b>Starch—</b>                    |                            |                               | Hamburg,                                 | 8 2                   |                |
| <b>Glucose—</b>        |                       |                             | <b>Wood Pulp—</b>                 |                                |                           | New York,                         | 350 sks. 125 bgs. 800 bxs. |                               | <b>Dyestuffs (otherwise undescribed)</b> |                       |                |
| Stettin,               | 300 bgs.              | Wilson, Sons, & Co., Ld.    | Christiania,                      | 2,454 pks.                     | Wilson, Sons, & Co., Ld.  | Ghent,                            | 20 cs.                     |                               | Rotterdam,                               | 200 cks. 56 cs.       |                |
| New York,              | 500 brls.             |                             | Hamburg,                          | 713                            |                           | <b>Stearine—</b>                  |                            |                               | Boulogne,                                | 1 2 3 pks.            |                |
| <b>Glue—</b>           |                       |                             | Hango,                            | 467 bls.                       | J. Good & Sons            | Rotterdam,                        | 14 cks.                    | J. Rankine & Son              | <b>Farina—</b>                           |                       |                |
| Dunkirk,               | 49 cks.               | Wilson, Sons, & Co., Ld.    | <b>GLASGOW.</b>                   |                                |                           | Amsterdam,                        | 62 bgs.                    |                               | Delfzyl,                                 | 322 bgs.              |                |
| Rouen,                 | 35 bls.               | 20 bgs. Rawson & Robinson   | <i>Week ending February 20th.</i> |                                |                           | <b>Sulphur—</b>                   |                            |                               | <b>Glue—</b>                             |                       |                |
| Antwerp,               | 3                     | Bailey & Leatham            | <b>Acetate of Lime—</b>           |                                |                           | Catania,                          | 48 cks. 416 bgs.           |                               | Rotterdam,                               | 40 bgs.               |                |
| New York,              | 1 cs.                 | Wilson, Sons, & Co., Ld.    | Philadelphia,                     | 681 bgs.                       |                           | <b>Talc—</b>                      |                            |                               | <b>Logwood—</b>                          |                       |                |
| <b>Manure—</b>         |                       |                             | New York,                         | 1,180                          |                           | Genoa,                            | 280 bgs.                   |                               | Hamburg,                                 | 63 t.                 |                |
| Rotterdam,             | 10 bgs.               | Hutchinson & Son            | <b>Albumen—</b>                   |                                |                           | <b>Tallow—</b>                    |                            |                               | Jamaica,                                 | 381                   |                |
| <b>Paint—</b>          |                       |                             | Cette,                            | 2 cs.                          |                           | Philadelphia,                     | 30 brls.                   | Watt & Co.                    | <b>Madder—</b>                           |                       |                |
| New York,              | 40 cs.                | Wilson, Sons, & Co., Ld.    | Ghent,                            | 10                             |                           | Baltimore,                        | 30                         |                               | Rotterdam,                               | 2 cks.                |                |
| <b>Phosphate—</b>      |                       |                             | <b>Ammonia—</b>                   |                                |                           | <b>Tartar—</b>                    | 150 tcs.                   |                               | Calais,                                  | 34 dms.               |                |
| Dunkirk,               | 400 bgs.              | Wilson, Sons, & Co., Ld.    | Antwerp,                          | 3 cks.                         |                           | Bordeaux,                         | 31 cks.                    |                               | Dunkirk,                                 | 10 cks. 40            |                |
| Ghent,                 | 1,000                 |                             | <b>Aniline—</b>                   |                                |                           | Marseilles,                       | 5 cks.                     |                               | Antwerp,                                 | 8                     |                |
| <b>Phosphate Rock—</b> |                       |                             | Rotterdam,                        | 17 cks. 7 cs. J. Rankine & Son |                           | Messina,                          | 28                         |                               | <b>Pyrites—</b>                          |                       |                |
| Bona,                  | 1,050 t.              | D. Hammond, Ems, & Co.      | <b>Antimony—</b>                  |                                |                           | <b>Treacle—</b>                   |                            |                               | Seville,                                 | 40 t.                 |                |
| <b>Pitch—</b>          |                       |                             | Leghorn,                          | 20 cks.                        |                           | Charente,                         | 8 cks.                     | Waddell & Bryson              | <b>Salt Petre—</b>                       |                       |                |
| Hango,                 | 1 brl.                | J. Good & Sons              | <b>Arachide Oil—</b>              |                                |                           | Philadelphia,                     | 250 brls.                  |                               | Antwerp,                                 | 85 bgs.               |                |
| Amsterdam,             | 13 cks.               | Hutchinson & Son            | Rotterdam,                        | 4 cks.                         | J. Rankine & Son          | <b>Varnish—</b>                   |                            |                               | Hamburg,                                 | 36 cks.               |                |
| <b>Potash—</b>         |                       |                             | <b>Asbestos—</b>                  |                                |                           | New York,                         | 250                        |                               | <b>Sodium Silicate—</b>                  |                       |                |
| Dunkirk,               | 1 dm.                 | Wilson, Sons, & Co., Ld.    | Genoa,                            | 15 bls.                        |                           | <b>White Lead—</b>                |                            |                               | Rotterdam,                               | 3 cks.                |                |
| <b>Pumice Stone—</b>   |                       |                             | <b>Barytes—</b>                   |                                |                           | Rotterdam,                        | 86 cks.                    | J. Rankine & Son              | <b>Starch—</b>                           |                       |                |
| Leghorn,               | 5 cs.                 |                             | Rotterdam,                        | 12 cks.                        | J. Rankine & Son          | <b>Wood Pulp—</b>                 |                            |                               | Rotterdam,                               | 34 cs.                |                |
| Messina,               | 630 pks.              | Wilson, Sons, & Co., Ld.    | <b>Colours—</b>                   |                                |                           | Christiania,                      | 730 bls.                   |                               | <b>Sulphur Ore—</b>                      |                       |                |
| <b>Rosin—</b>          |                       |                             | Rotterdam,                        | 8 cks.                         | J. Rankine & Son          | <b>Zinc Oxide—</b>                |                            |                               | Seville,                                 | 515 t.                |                |
| Savannah,              | 815 brls.             |                             | Antwerp,                          | 2                              |                           | Rotterdam,                        | 13 cks.                    | J. Rankine & Son              | <b>Waste Salt—</b>                       |                       |                |
| <b>Salt—</b>           |                       |                             | Rotterdam,                        | 74 pks.                        |                           | <b>Barium Chlorate—</b>           |                            |                               | Hamburg,                                 | 233 cks.              |                |
| Gothenburg,            | 1 cs.                 | Wilson, Sons, & Co., Ld.    | <b>Dyestuffs—</b>                 |                                |                           | Rotterdam,                        | 420 bgs.                   | Tyne S. S. Co.                | <b>GRIMSBY.</b>                          |                       |                |
| <b>Salt Petre—</b>     |                       |                             | <b>Alizarine</b>                  |                                |                           | Bona,                             | 600 t.                     | Blaydon Manure and Alkali Co. | <i>Week ending February 15th.</i>        |                       |                |
| Hamburg,               | 76 pks.               | Wilson, Sons, & Co., Ld.    | Rotterdam,                        | 34 cks.                        | J. Rankine & Son          | <b>Pitch—</b>                     |                            |                               | <b>Albumen—</b>                          |                       |                |
| <b>Soap—</b>           |                       |                             | <b>Argols</b>                     |                                |                           | Rotterdam,                        | 1 ck.                      | Tyne S. S. Co.                | Antwerp,                                 | 3 cs.                 |                |
| Naples,                | 31 cs.                | Wilson, Sons, & Co., Ld.    | Bordeaux,                         | 83 cks.                        |                           | <b>Quicksilver—</b>               |                            |                               | Hamburg,                                 | 5 cks.                |                |
| Bari,                  | 130                   |                             | <b>Extracts</b>                   |                                |                           | Copenhagen,                       | 100 cyldrs.                |                               | <b>Caoutchouc—</b>                       |                       |                |
| Rotterdam,             | 4                     | Hutchinson & Son            | <b>Shumac</b>                     |                                |                           | <b>TYNE.</b>                      |                            |                               | Rotterdam,                               | 2 cs.                 |                |
| New York,              | 50 bxs.               | Wilson, Sons, & Co., Ld.    | Palermo,                          | 1,060 bgs.                     |                           | <i>Week ending February 15th.</i> |                            |                               | Antwerp,                                 | 2                     |                |

## EXPORTS OF CHEMICAL PRODUCTS

OF

## THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

## LONDON.

*Week ending February 19th.*

## Acetanilide—

New York, 2 c. £12

## Acetic Acid—

Cape Town, 2 cks. £10

## Acids—

Calcutta, 10 cs. £30

## Alum Earth—

Durban, 5 10

## Alkali—

M. Video, 6 c. £8

## Aluminous Cake—

Calcutta, 20 t. £15

## Ammonia—

Hamburg, 10 dms. £1



**Ammonia (Liquid)—**

|                            |            |     |
|----------------------------|------------|-----|
| Santos,                    | 8 c.       | £24 |
| <b>Ammonium Carbonate—</b> |            |     |
| Dunkirk,                   | 1 t. 10 c. | £50 |

**Ammonium Sulphate—**

|            |      |       |
|------------|------|-------|
| Havre,     | 5 t. | £49   |
| Amsterdam, | 150  | 1,350 |
| Bremen,    | 238  | 2,022 |
| Rotterdam, | 100  | 900   |
| Antwerp,   | 70   | 630   |
| Valencia,  | 50   | 450   |
| Cullera,   | 150  | 1,350 |
| Ghent,     | 98   | 862   |
| Ostend,    | 130  | 1,125 |
| Dunkirk,   | 160  | 1,440 |
| Rouen,     | 100  | 850   |

**Amorphous Phosphorus—**

|            |         |      |
|------------|---------|------|
| Cape Town, | 75 cts. | £196 |
|------------|---------|------|

**Anhydrous Ammonia—**

|           |            |      |
|-----------|------------|------|
| Calcutta, | 32 cyslrs. | £300 |
|-----------|------------|------|

**Arsenic—**

|            |        |     |
|------------|--------|-----|
| Amsterdam, | 6 cks. | £24 |
|------------|--------|-----|

**Bisulphite of Lime—**

|        |       |    |
|--------|-------|----|
| Natal, | 13 c. | 13 |
|--------|-------|----|

**Boracic Acid—**

|        |        |     |
|--------|--------|-----|
| Paris, | 6 cks. | £13 |
|--------|--------|-----|

**Borax—**

|            |        |     |
|------------|--------|-----|
| Melbourne, | 7 cks. | £65 |
|------------|--------|-----|

**Carbolic Acid—**

|            |      |      |
|------------|------|------|
| Rotterdam, | 5 t. | £160 |
|------------|------|------|

**Carbonic Acid—**

|                |         |     |
|----------------|---------|-----|
| San Francisco, | 10 cks. | £67 |
|----------------|---------|-----|

**Carbonic Acid Gas—**

|        |    |    |
|--------|----|----|
| Rouen, | 24 | 45 |
|--------|----|----|

**Caustic Soda—**

|             |    |     |
|-------------|----|-----|
| Marseilles, | 80 | 135 |
|-------------|----|-----|

**Chemicals (otherwise undescribed)**

|            |                    |     |
|------------|--------------------|-----|
| Rotterdam, | 19 t. 47 48 nrlts. | 711 |
|------------|--------------------|-----|

**Coal Products—**

|               |    |     |
|---------------|----|-----|
| Newport News, | 10 | 153 |
|---------------|----|-----|

**Chloride—**

|         |         |     |
|---------|---------|-----|
| Jersey, | 4 tubes | £14 |
|---------|---------|-----|

**Citric Acid—**

|          |            |     |
|----------|------------|-----|
| Brabant, | 5 t. 17 c. | £80 |
|----------|------------|-----|

**Disinfectants—**

|              |    |    |
|--------------|----|----|
| Delagoa Bay, | 16 | 17 |
|--------------|----|----|

**Manure—**

|            |   |   |
|------------|---|---|
| Cape Town, | 4 | 6 |
|------------|---|---|

**Nitric Acid—**

|            |   |    |
|------------|---|----|
| Normanton, | 6 | 13 |
|------------|---|----|

**Phosphate—**

|         |   |   |
|---------|---|---|
| Napier, | 5 | 6 |
|---------|---|---|

**Phosphoric Acid—**

|            |   |    |
|------------|---|----|
| Algoa Bay, | 1 | 10 |
|------------|---|----|

**Phosphorus—**

|            |   |   |
|------------|---|---|
| Melbourne, | 9 | 2 |
|------------|---|---|

**Potash—**

|            |   |   |
|------------|---|---|
| Singapore, | 2 | 3 |
|------------|---|---|

**Potassium Bichromate—**

|        |   |     |
|--------|---|-----|
| Natal, | 9 | 220 |
|--------|---|-----|

**Potassium Chlorate—**

|        |        |     |
|--------|--------|-----|
| Rabat, | 6 pks. | £10 |
|--------|--------|-----|

**Potassium Chloride—**

|        |       |   |
|--------|-------|---|
| Paris, | 1 cs. | 2 |
|--------|-------|---|

**Potassium Cyanide—**

|         |   |    |
|---------|---|----|
| Madras, | 4 | 75 |
|---------|---|----|

**Potassium Sulphate—**

|           |    |    |
|-----------|----|----|
| Shanghai, | 89 | 45 |
|-----------|----|----|

**Potassium Tartrate—**

|            |   |    |
|------------|---|----|
| Kurrachee, | 3 | 25 |
|------------|---|----|

**Potassium Trisulphate—**

|         |    |    |
|---------|----|----|
| Bombay, | 28 | 60 |
|---------|----|----|

**Potassium Valerianate—**

|             |        |    |
|-------------|--------|----|
| Copenhagen, | 5 cks. | 47 |
|-------------|--------|----|

**Potassium Vitriol—**

|        |       |     |
|--------|-------|-----|
| Reval, | 15 t. | 490 |
|--------|-------|-----|

**Potassium Zeolite—**

|          |   |    |
|----------|---|----|
| Madeira, | 8 | 16 |
|----------|---|----|

**Potassium Zeolite—**

|             |    |    |
|-------------|----|----|
| Wellington, | 16 | 11 |
|-------------|----|----|

**Potassium Zeolite—**

|         |   |    |
|---------|---|----|
| Sydney, | 2 | 25 |
|---------|---|----|

**Potassium Zeolite—**

|              |    |    |
|--------------|----|----|
| Rockhampton, | 10 | 21 |
|--------------|----|----|

**Potassium Zeolite—**

|          |   |    |
|----------|---|----|
| Treport, | 5 | 14 |
|----------|---|----|

**Potassium Zeolite—**

|                     |    |     |
|---------------------|----|-----|
| Dunkirk, 18 dms. 10 | 14 | 475 |
|---------------------|----|-----|

**Potassium Zeolite—**

|             |       |   |
|-------------|-------|---|
| Alexandria, | 1 cs. | 5 |
|-------------|-------|---|

**Rotterdam, 47 48 nrlts. 336****Creosote**

|           |           |      |
|-----------|-----------|------|
| New York, | 500 brls. | £225 |
|-----------|-----------|------|

**Naphtha—**

|             |            |       |
|-------------|------------|-------|
| N. Orleans, | 2,500 cks. | 1,250 |
|-------------|------------|-------|

**Naphthalene**

|         |               |     |
|---------|---------------|-----|
| Dieppe, | 23,500 galns. | 123 |
|---------|---------------|-----|

**Naphthalene**

|           |          |     |
|-----------|----------|-----|
| Brussels, | 10 brls. | £25 |
|-----------|----------|-----|

**Naphthalene**

|         |         |    |
|---------|---------|----|
| Sydney, | 10 cts. | 11 |
|---------|---------|----|

**Naphthalene**

|           |         |     |
|-----------|---------|-----|
| Boulogne, | 47 cks. | 200 |
|-----------|---------|-----|

**Naphthalene**

|             |                 |      |
|-------------|-----------------|------|
| Marseilles, | 87 cks. 30 bgs. | £156 |
|-------------|-----------------|------|

**Naphthalene**

|            |   |    |
|------------|---|----|
| Algoa Bay, | 9 | 20 |
|------------|---|----|

**Naphthalene**

|          |           |     |
|----------|-----------|-----|
| Hamburg, | 157 1,604 | 642 |
|----------|-----------|-----|

**Naphthalene**

|           |    |    |
|-----------|----|----|
| Brussels, | 30 | 30 |
|-----------|----|----|

**Naphthalene**

|             |    |     |
|-------------|----|-----|
| Le Treport, | 97 | 137 |
|-------------|----|-----|

**Naphthalene**

|               |          |     |
|---------------|----------|-----|
| Sierra Leone, | 10 brls. | £49 |
|---------------|----------|-----|

**Naphthalene**

|             |          |     |
|-------------|----------|-----|
| N. Orleans, | 200 cks. | 116 |
|-------------|----------|-----|

**Naphthalene**

|            |   |   |
|------------|---|---|
| Mauritius, | 4 | 9 |
|------------|---|---|

**Naphthalene**

|            |            |     |
|------------|------------|-----|
| Baltimore, | 1,124 bgs. | 212 |
|------------|------------|-----|

**Naphthalene**

|          |          |       |
|----------|----------|-------|
| Antwerp, | 1,306 t. | 2,482 |
|----------|----------|-------|

**Naphthalene**

|            |         |    |
|------------|---------|----|
| Hong Kong, | 10 cts. | 10 |
|------------|---------|----|

**Naphthalene**

|         |     |     |
|---------|-----|-----|
| Boston, | 301 | 321 |
|---------|-----|-----|

**Naphthalene**

|         |     |       |
|---------|-----|-------|
| Huelva, | 865 | 1,470 |
|---------|-----|-------|

**Naphthalene**

|             |     |       |
|-------------|-----|-------|
| Alexandria, | 865 | 1,470 |
|-------------|-----|-------|

**Naphthalene**

|           |         |     |
|-----------|---------|-----|
| Adelaide, | 11 pks. | 350 |
|-----------|---------|-----|

**Naphthalene**

|     |  |  |
|-----|--|--|
| Tar |  |  |
|-----|--|--|

**Naphthalene**

|         |         |    |
|---------|---------|----|
| Sydney, | 50 dms. | £9 |
|---------|---------|----|

**Naphthalene**

|               |           |    |
|---------------|-----------|----|
| Sierra Leone, | 10 nrlts. | 12 |
|---------------|-----------|----|

**Naphthalene**

|           |    |   |
|-----------|----|---|
| Brisbane, | 50 | 9 |
|-----------|----|---|

**Naphthalene**

|             |    |    |
|-------------|----|----|
| Madagascar, | 10 | 15 |
|-------------|----|----|

**Naphthalene**

|              |       |    |
|--------------|-------|----|
| Delagoa Bay, | 1 cs. | 15 |
|--------------|-------|----|

**Naphthalene**

|             |    |   |
|-------------|----|---|
| Champerico, | 10 | 6 |
|-------------|----|---|

**Naphthalene**

|            |     |   |
|------------|-----|---|
| Algoa Bay, | 130 | 9 |
|------------|-----|---|

**Naphthalene**

|         |     |    |
|---------|-----|----|
| Durban, | 340 | 47 |
|---------|-----|----|

**Naphthalene**

|            |    |   |
|------------|----|---|
| E. London, | 45 | 4 |
|------------|----|---|

**Naphthalene**

|        |     |    |
|--------|-----|----|
| Natal, | 100 | 13 |
|--------|-----|----|

**Naphthalene**

|         |          |    |
|---------|----------|----|
| Batoum, | 11 brls. | 18 |
|---------|----------|----|

**Naphthalene**

|           |     |    |
|-----------|-----|----|
| Adelaide, | 130 | 24 |
|-----------|-----|----|

**Naphthalene**

|        |  |  |
|--------|--|--|
| Toluol |  |  |
|--------|--|--|

**Naphthalene**

|            |           |      |
|------------|-----------|------|
| Rotterdam, | 50 nrlts. | £150 |
|------------|-----------|------|

**Naphthalene**

|                 |  |  |
|-----------------|--|--|
| Copper Sulphate |  |  |
|-----------------|--|--|

**Naphthalene**

|             |       |        |
|-------------|-------|--------|
| Marseilles, | 65 t. | £1,069 |
|-------------|-------|--------|

**Naphthalene**

|           |    |    |
|-----------|----|----|
| Bordeaux, | 50 | 16 |
|-----------|----|----|

**Naphthalene**

|       |   |    |
|-------|---|----|
| Java, | 6 | 95 |
|-------|---|----|

**Naphthalene**

|         |    |     |
|---------|----|-----|
| Batoum, | 10 | 159 |
|---------|----|-----|

**Naphthalene**

|        |    |     |
|--------|----|-----|
| Paris, | 50 | 787 |
|--------|----|-----|

**Naphthalene**

|                  |  |  |
|------------------|--|--|
| Cream of Tartar— |  |  |
|------------------|--|--|

|         |            |      |
|---------|------------|------|
| Sydney, | 1 t. 10 c. | £157 |
|---------|------------|------|

|           |   |    |
|-----------|---|----|
| Brisbane, | 2 | 10 |
|-----------|---|----|

|            |   |    |
|------------|---|----|
| Fremantle, | 3 | 17 |
|------------|---|----|

|           |   |   |
|-----------|---|---|
| Cooktown, | 2 | 2 |
|-----------|---|---|

|             |   |    |
|-------------|---|----|
| Wellington, | 5 | 25 |
|-------------|---|----|

|        |   |   |
|--------|---|---|
| Natal, | 1 | 0 |
|--------|---|---|

|                |  |  |
|----------------|--|--|
| Disinfectants— |  |  |
|----------------|--|--|

|          |         |      |
|----------|---------|------|
| Hamburg, | 25 cks. | £125 |
|----------|---------|------|

|           |          |    |
|-----------|----------|----|
| Calcutta, | 500 dms. | 26 |
|-----------|----------|----|

|        |       |    |
|--------|-------|----|
| Hiogo, | 3 cs. | 21 |
|--------|-------|----|

|         |    |    |
|---------|----|----|
| Sydney, | 24 | 34 |
|---------|----|----|

|          |    |    |
|----------|----|----|
| Antwerp, | 15 | 53 |
|----------|----|----|

|         |       |     |
|---------|-------|-----|
| Ostend, | 25 t. | 225 |
|---------|-------|-----|

|            |         |    |
|------------|---------|----|
| E. London, | 60 pks. | 89 |
|------------|---------|----|

|           |       |    |
|-----------|-------|----|
| Shanghai, | 19 c. | 35 |
|-----------|-------|----|

|            |     |     |
|------------|-----|-----|
| Singapore, | 250 | 105 |
|------------|-----|-----|

|         |  |  |
|---------|--|--|
| Manure— |  |  |
|---------|--|--|

|            |       |      |
|------------|-------|------|
| Rotterdam, | 50 t. | £450 |
|------------|-------|------|

|            |    |   |
|------------|----|---|
| Cape Town, | 89 | 5 |
|------------|----|---|

|             |     |   |
|-------------|-----|---|
| Martinique, | 118 | 1 |
|-------------|-----|---|

|          |    |     |
|----------|----|-----|
| Treport, | 30 | 220 |
|----------|----|-----|

|         |    |    |
|---------|----|----|
| Santos, | 30 | 11 |
|---------|----|----|

|          |   |    |
|----------|---|----|
| Jamaica, | 8 | 78 |
|----------|---|----|

|           |    |   |
|-----------|----|---|
| Trinidad, | 52 | 2 |
|-----------|----|---|

|            |     |   |
|------------|-----|---|
| Cherbourg, | 450 | 1 |
|------------|-----|---|

|         |     |   |
|---------|-----|---|
| Jersey, | 145 | 1 |
|---------|-----|---|

|           |    |       |
|-----------|----|-------|
| Guernsey, | 18 | 1,110 |
|-----------|----|-------|

|        |    |    |
|--------|----|----|
| Ghent, | 10 | 55 |
|--------|----|----|

|           |   |    |
|-----------|---|----|
| New York, | 4 | 19 |
|-----------|---|----|

|              |  |  |
|--------------|--|--|
| Nitric Acid— |  |  |
|--------------|--|--|

|            |        |     |
|------------|--------|-----|
| E. London, | 10 cs. | £13 |
|------------|--------|-----|

|         |            |    |
|---------|------------|----|
| Jersey, | 24 carboys | 30 |
|---------|------------|----|

|            |  |  |
|------------|--|--|
| Phosphate— |  |  |
|------------|--|--|

|              |       |     |
|--------------|-------|-----|
| Delagoa Bay, | 10 t. | £20 |
|--------------|-------|-----|

|           |     |     |
|-----------|-----|-----|
| Demerara, | 100 | 215 |
|-----------|-----|-----|

|                  |  |  |
|------------------|--|--|
| Phosphoric Acid— |  |  |
|------------------|--|--|

|           |            |     |
|-----------|------------|-----|
| Trinidad, | 1 t. 10 c. | £20 |
|-----------|------------|-----|

|             |  |  |
|-------------|--|--|
| Phosphorus— |  |  |
|-------------|--|--|

|          |       |     |
|----------|-------|-----|
| Dunedin, | 5 cs. | £49 |
|----------|-------|-----|

|         |  |  |
|---------|--|--|
| Potash— |  |  |
|---------|--|--|

|            |       |     |
|------------|-------|-----|
| Melbourne, | 19 c. | £47 |
|------------|-------|-----|

|                       |  |  |
|-----------------------|--|--|
| Potassium Bichromate— |  |  |
|-----------------------|--|--|

|           |      |     |
|-----------|------|-----|
| Calcutta, | 1 t. | £44 |
|-----------|------|-----|

|                 |       |    |
|-----------------|-------|----|
| Rio de Janeiro, | 1 ck. | 10 |
|-----------------|-------|----|

|                     |  |  |
|---------------------|--|--|
| Potassium Chlorate— |  |  |
|---------------------|--|--|

|           |       |     |
|-----------|-------|-----|
| Calcutta, | 10 c. | £21 |
|-----------|-------|-----|



**Chemicals (otherwise undescr.)**

|             |      |     |
|-------------|------|-----|
| Antwerp,    | 6 c. | £11 |
| Jaffa,      | 2    | 3   |
| Alexandria, | 2 t. | 74  |
| Stettin,    | 9    | 15  |
| Hamburg,    | 12   | 20  |
| Rotterdam,  | 1    | 33  |
| Odessa,     | 5    | 165 |
| Oporto,     | 1    | 5   |
| Galatz,     | 6    | 12  |
| Kurrachee,  | 18   | 31  |

**China Clay—**

|                 |        |      |
|-----------------|--------|------|
| Barcelona,      | 39 t.  |      |
| Boston,         | 329    | 2 c. |
| Calcutta,       | 31     | 5    |
| Maranham,       | 5      |      |
| Philadelphia,   | 70 cks |      |
| Portland,       | 140    |      |
| Rio de Janeiro, | 50     |      |

**Cobalt Oxide—**

|           |          |      |
|-----------|----------|------|
| Nagasaki, | 800 lbs. | £290 |
|-----------|----------|------|

**Coal Products—**

|                      |                |  |
|----------------------|----------------|--|
| <b>Aniline Dye</b>   |                |  |
| Barcelona,           | 2 c.           |  |
| <b>Aniline Oil</b>   |                |  |
| Barcelona,           | 22 cks.        |  |
| St. Nazaire,         | 1 dm.          |  |
| <b>Aniline Salts</b> |                |  |
| Boston,              | 12 cks. 63 cs. |  |
| <b>Creosote Oil</b>  |                |  |
| Lisbon,              | 300 brls.      |  |
| <b>Pitch</b>         |                |  |
| Antwerp,             | 5,000 brls.    |  |
| Cette,               | 855 t.         |  |
| Sulina,              | 10             |  |
| <b>Tar</b>           |                |  |
| Galatz,              | 204 brls.      |  |
| Ibrail,              | 135            |  |
| Kustendjie,          | 30             |  |
| Penang,              | 38             |  |
| Sourabaya,           | 50             |  |
| Sulina,              | 80             |  |

**Coal Products (otherwise undescr.)—**

|           |                        |  |
|-----------|------------------------|--|
| New York, | 10 cks. 10 cs. 9 brls. |  |
|-----------|------------------------|--|

**Copper Sulphate—**

|             |      |       |      |       |
|-------------|------|-------|------|-------|
| Batoum,     | 4 t. | 10 c. | 3 q. | £80   |
| Marseilles, | 54   | 2     | 5    | 294   |
| Tampico,    | 18   |       |      | 280   |
| Cairo,      |      | 19    |      | 15    |
| Cette,      | 569  | 13    | 3    | 9,164 |
| Bordeaux,   | 315  | 16    | 4    | 3,572 |
| Nantes,     | 32   | 9     | 1    | 496   |
| Paris,      | 105  | 7     |      | 1,625 |
| Timbo,      |      | 11    |      | 10    |
| Oporto,     | 29   | 4     | 3    | 442   |
| Tunis,      | 24   | 12    |      | 376   |
| Vera Cruz,  |      | 7     |      | 1,045 |
| Leghorn,    | 66   | 10    | 1    | 680   |
| Genoa,      | 43   | 17    | 1    | 651   |
| Venice,     | 43   | 8     | 1    | 293   |
| Palermo,    | 19   |       |      | 1,010 |
| Naples,     | 67   | 18    | 2    | 75    |
| Trieste,    | 4    | 17    |      | 535   |
| Algiers,    | 24   | 15    | 1    | 306   |
| Sydney,     | 20   |       |      | 326   |
| Rouen,      | 25   | 8     | 1    | 60    |
| Catania,    | 4    | 13    | 4    |       |

**Disinfectants—**

|             |       |     |
|-------------|-------|-----|
| Calcutta,   | 11 c. | £18 |
| Valparaiso, | 8     | 12  |
| Bombay,     | 2 t.  | 17  |

**Dried Blood—**

|             |       |      |      |     |
|-------------|-------|------|------|-----|
| Bordeaux,   | 10 t. | 4 c. | 1 q. | £81 |
| Las Palmas, | 5     |      |      | 32  |

**Gelatine—**

|            |         |  |
|------------|---------|--|
| Baltimore, | 75 bxs. |  |
| Boston,    | 75      |  |

**Glue—**

|                 |          |  |
|-----------------|----------|--|
| New York,       | 150 bgs. |  |
| St. John, N.B., | 5        |  |
| Boston,         | 50       |  |

**Guano—**

|             |      |      |     |
|-------------|------|------|-----|
| Gd. Canary, | 5 t. | 1 c. | £32 |
| Madeira,    | 10   |      | 64  |
| Malaga,     | 30   |      | 271 |

**Indigo Extract—**

|               |       |     |
|---------------|-------|-----|
| Philadelphia, | 14 c. | £12 |
|---------------|-------|-----|

**Iron Oxide—**

|         |      |       |    |
|---------|------|-------|----|
| Boston, | 1 t. | 12 c. | £7 |
| Gijon,  | 1    | 13    | 10 |

**Lime—**

|           |       |      |
|-----------|-------|------|
| Demerara, | 98 t. | £164 |
| Conakry,  | 3     | 8 c. |

**Magnesia—**

|                 |        |       |
|-----------------|--------|-------|
| Adelaide,       | 11 cs. |       |
| Halifax,        | 5      |       |
| Havre,          | 7      |       |
| Puerto Cabello, | 1      | 1 bx. |

**Magnesium Carbonate—**

|        |       |  |
|--------|-------|--|
| Colon, | 3 cs. |  |
|--------|-------|--|

**Magnesium Chloride—**

|        |      |      |    |
|--------|------|------|----|
| Genoa, | 2 t. | 1 c. | £5 |
|--------|------|------|----|

**Magnesium Sulphate—**

|                 |          |  |
|-----------------|----------|--|
| Alexandria,     | 100 kgs. |  |
| Calcutta,       | 12 cs.   |  |
| Rio de Janeiro, | 100      |  |

**Manures—**

|               |       |     |
|---------------|-------|-----|
| Vera Cruz,    | 18 c. | £90 |
| Valencia,     | 75 t. | 16  |
| B. Ayres,     | 5     | 11  |
| Philadelphia, | 2     | 9   |
| St. Nazaire,  | 20    | 60  |
| Bordeaux,     | 351   | 13  |
| St. Malo,     | 345   | 7   |
| Demerara,     | 50    | 150 |

**Muriatic Acid—**

|             |       |     |
|-------------|-------|-----|
| Pernambuco, | 6 cs. | £10 |
|-------------|-------|-----|

**Oxalic Acid—**

|            |      |      |      |      |
|------------|------|------|------|------|
| Barcelona, | 5 t. | 3 c. | 2 q. | £160 |
| Lisbon,    | 1    | 3    |      | 34   |

**Paint—**

|                |         |          |
|----------------|---------|----------|
| Axim,          | 2 cks.  |          |
| Bahia,         | 2       |          |
| Barranquilla,  | 6       | 245 kgs. |
| Benguella,     | 2       | 60       |
| Bordeaux,      | 2       |          |
| Calcutta,      | 3       | 9 dms.   |
| Cape Coast,    | 35      |          |
| Cape Town,     | 1       | 78       |
| Guayaquil,     | 2       |          |
| Lagos,         | 88      | 40       |
| Loanda,        | 21      |          |
| Malta,         | 4 bxs.  |          |
| Mayaguez,      | 4       |          |
| M. Video,      | 40 cs.  |          |
| Mossamedes,    | 4       | 35       |
| New York,      | 55      | 90       |
| 215 brls.      |         | 35 cs.   |
| Pelotas,       | 82 pks. |          |
| Pt. Elizabeth, | 60      |          |
| Portland, M.,  | 2       |          |
| San Juan,      | 17      |          |
| Santos,        | 1       |          |
| Smyrna,        | 55      | 55       |
| Sulina,        | 18      |          |
| Sydney,        | 10      |          |
| Talcahuana,    | 23      |          |
| Tampico,       | 3       | 8        |
| Timbo,         | 3 brls. | 6        |
| Trieste,       | 10      | 2        |
| Valparaiso,    | 12      | 229      |

**Painters' Colours—**

|               |            |                   |
|---------------|------------|-------------------|
| Alexandria,   | 10 brls.   |                   |
| Bilbao,       | 12 cks.    |                   |
| Bombay,       | 1,075 pks. | 1,017 kgs. 38 cs. |
| 25 brls.      |            |                   |
| Brisbane,     | 5          | 9                 |
| B. Ayres,     | 47 brls.   | 67                |
| Cadedello,    |            | 10 brls.          |
| Calcutta,     |            | 60 kgs.           |
| Genoa,        |            | 3 cs.             |
| Hong Kong,    | 25         |                   |
| Ibrail,       | 2          |                   |
| Kurrachee,    | 6          |                   |
| La Plata,     | 51         |                   |
| Las Palmas,   | 180        |                   |
| Manaos,       | 3          | 5 brls.           |
| Manila,       | 100        |                   |
| Maranham,     |            | 32                |
| Matanzas,     | 1          |                   |
| Mayaguez,     | 3          | 130               |
| Newport News, | 152        | 6                 |
| New York,     | 18         | 50 bgs.           |
| Rotterdam,    | 20         |                   |
| Santander,    | 25         |                   |

**Paraffin Wax—**

|                 |         |  |
|-----------------|---------|--|
| Patras,         | 15 cs.  |  |
| Pireus,         | 7       |  |
| Rio de Janeiro, | 4       |  |
| Smyrna,         | 10 bgs. |  |

**Phosphorus—**

|                 |      |     |
|-----------------|------|-----|
| Rio de Janeiro, | 9 c. | £11 |
| Higo,           | 2 t. | 15  |

**Potassium Bichromate—**

|           |      |      |
|-----------|------|------|
| Catania,  | 6 c. | £13  |
| Ancona,   | 7    | 2 q. |
| B. Ayres, | 7    | 1    |

**Potassium Chlorate—**

|            |      |     |
|------------|------|-----|
| Cartagena, | 1 c. | £3  |
| Stettin,   | 1 t. | 38  |
| Naples,    | 1    | 40  |
| Higo,      | 12   | 10  |
| New York,  | 12   | 10  |
| Genoa,     | 1    | 443 |
| M. Video,  | 2    | 80  |
| Shanghai,  | 1    | 10  |
| Odessa,    | 1    | 47  |
| Adelaide,  | 10   | 15  |

**Salt—**

|            |      |  |
|------------|------|--|
| Accra,     | 6 t. |  |
| Antwerp,   | 50   |  |
| Barbadoes, | 48   |  |
| Boma,      | 66   |  |
| Boston,    | 80   |  |
| B. Ayres,  | 16   |  |

**Cape Palmas,**

|            |     |       |
|------------|-----|-------|
| Cape Town, | 100 |       |
| Demerara,  | 454 | 16 c. |
| Dunedin,   | 75  |       |
| Ghent,     | 250 |       |

**Guayaquil,**

|               |     |          |
|---------------|-----|----------|
| Hamburg,      | 2   | 11       |
| Lagos,        | 100 |          |
| Melbourne,    | 50  |          |
| New York,     | 5   | 13 cks.  |
| Opobo,        | 24  |          |
| Para,         | 271 | 8        |
| Parnahyba,    | 50  |          |
| Pelotas,      | 104 | 2        |
| Portland,     |     | 400 sks. |
| Salt Pond,    | 12  |          |
| Santos,       | 10  |          |
| Shanghai,     |     | 11       |
| Sierra Leone, | 150 |          |
| Sydney,       | 10  |          |
| Trinidad,     | 108 | 4        |
| Valparaiso,   | 1   | 2        |
| Wellington,   | 115 |          |

**Salt Cake—**

|            |        |      |
|------------|--------|------|
| Baltimore, | 100 t. | £129 |
| Lisbon,    | 5      | 8    |

**Sheep Dip—**

|            |      |       |
|------------|------|-------|
| Pt. Natal, | 2 t. | £80   |
| Kurrachee, | 1    | 10 c. |
| Galveston, | 23   | 15    |
| Sydney,    | 3    | 17    |
| Savanna,   | 4    | 3     |
| B. Ayres,  | 75   | 1     |
| M. Video,  | 5    | 11    |

**Soap—**

|                 |           |           |
|-----------------|-----------|-----------|
| Accra,          | 91 bxs.   | 100 cs.   |
| Akassa,         |           | 387       |
| Amsterdam,      | 50        |           |
| Appam,          | 250       |           |
| Bathurst,       | 172       |           |
| Bombay,         |           | 10        |
| Boston,         | 10 brls.  | 2         |
| Calcutta,       | 550 brls. | 2         |
| Cameroon,       | 220 bxs.  |           |
| Cape Coast,     | 50        |           |
| Cape Town,      | 2,125     | 100       |
| Cartagena,      |           | 4         |
| Constantinople, |           | 20        |
| Curacao,        | 50        | 12        |
| Delagoa Bay,    | 300       |           |
| Demerara,       | 1,750     | 6         |
| Durban,         | 740       |           |
| E. London,      | 895       | 35        |
| Genoa,          | 14        |           |
| Gibraltar,      | 340       |           |
| Gd. Bassa,      | 45        |           |
| Hamburg,        |           | 250       |
| Kurrachee,      | 500       | 64        |
| Lagos,          | 60        | 50        |
| Loanda,         |           | 1         |
| Madras,         |           | 21        |
| Mauritius,      | 2,021     |           |
| Mos-el Bay,     | 50        |           |
| New York,       | 521       | 4 cks. 79 |
| 100 dms.        |           |           |
| Old Calabar,    | 200       |           |
| Opobo,          | 2,350     | 50        |
| Patras,         |           | 30        |
| Penang,         | 50        |           |
| Portland, Me.,  |           | 28        |
| Pt. Said,       | 20        |           |
| Rangoon,        |           | 6         |
| Rotterdam,      |           | 426       |
| Salt Pond,      | 25        |           |
| San Juan,       | 50        |           |
| Savanna,        |           | 4         |
| Shanghai,       | 4,830     |           |
| Sierra Leone,   | 160       |           |
| Singapore,      | 150       | 200       |
| Talcahuano,     | 200       |           |
| Tientsin,       | 25        |           |
| Trieste,        |           | 1         |
| Trinidad,       | 1,350     | 3         |
| Valparaiso,     |           | 3         |

**Soda—**

|         |        |  |
|---------|--------|--|
| Lisbon, | 4 cks. |  |
|---------|--------|--|

**Soda Alkali—**

|                |          |  |
|----------------|----------|--|
| Galatz,        | 40 brls. |  |
| Genoa,         | 35       |  |
| Oporto,        | 36       |  |
| Portland, Me., | 35       |  |

**Soda Ash—**

|            |         |             |
|------------|---------|-------------|
| Amsterdam, | 16 bgs. |             |
| Antwerp,   | 225     | 5 cks.      |
| Baltimore, | 250     |             |
| Barcelona, |         | 34          |
| Bombay,    |         | 39          |
| Boston,    | 1,380   | 153 tcs. 68 |
| B. Ayres,  |         | 73 brls.    |
| Caliz,     |         | 27          |
| Halifax,   | 200     | 4 tcs.      |
| Hong Kong, |         | 76          |
| Melbourne, |         | 383         |
| New York,  | 2,204   | 333         |
| Oporto,    |         | 19          |

|               |       |     |          |
|---------------|-------|-----|----------|
| Philadelphia, | 2,600 | 216 | 64       |
| Portland,     |       |     | 2        |
| Rotterdam,    | 150   |     |          |
| Smyrna,       | 100   |     |          |
| Sydney,       |       |     | 384      |
| Syria,        |       |     | 50 brls. |
| Valparaiso,   | 125   |     |          |
| Yokohama,     |       |     | 1,059    |

**Soda Crystals—**

|             |         |    |
|-------------|---------|----|
| Halifax,    | 12 kgs. |    |
| Iquique,    |         | 50 |
| Valparaiso, | 45      |    |

**Sodium Bicarbonate—**

|               |         |           |
|---------------|---------|-----------|
| Amsterdam,    | 20 kgs. |           |
| Antwerp,      | 45      |           |
| Canterbury,   | 50      |           |
| Dunedin,      | 50      |           |
| Genoa,        | 160     |           |
| Marseilles,   |         | 125 bxs.  |
| Mauritius,    | 40      |           |
| Melbourne,    | 450     | 13        |
| Nantes,       | 35      |           |
| Newport News, |         | 25        |
| Paris,        | 170     | 12 bgs. 6 |
| Pt. Natal,    | 20      |           |
| Rangoon,      |         | 4         |
| Rotterdam,    |         | 20        |
| Sydney,       | 14      |           |
| Trinidad,     | 100     |           |
| Adelaide,     | 20      |           |
| Algoa Bay,    | 45      | 150       |
| Baltimore,    |         | 75        |
| Barcelona,    | 90      | 2         |
| Bombay,       | 125     |           |
| Bordeaux,     | 45      |           |
| Catania,      | 40      |           |
| Christiania,  | 20      |           |
| Hamburg,      | 30      |           |
| Kurrachee,    | 1,500   |           |
| Leghorn,      | 20      |           |
| Valparaiso,   | 50      |           |
| Wellington,   | 50      |           |
| Yokohama,     | 1,750   |           |

**Sodium Bichromate—**

|         |        |  |
|---------|--------|--|
| Lisbon, | 2 cks. |  |
|---------|--------|--|

**Sodium Chlorate—**

|            |         |  |
|------------|---------|--|
| Rotterdam, | 60 kgs. |  |
|------------|---------|--|

**Sodium Oxide—**

|           |        |  |
|-----------|--------|--|
| New York, | 22 cs. |  |
|-----------|--------|--|

**Sodium Silicate—**

|               |         |          |
|---------------|---------|----------|
| Alicante,     | 20 cks. |          |
| Cadiz,        |         | 6 brls.  |
| Calcutta,     | 16      |          |
| Christchurch, | 20      |          |
| Hamburg,      | 2       |          |
| Havre,        |         | 10       |
| Oporto,       | 64      |          |
| Portland,     | 7       |          |
| Salonica,     | 23      |          |
| Seville,      | 50      |          |
| Valencia,     |         | 300 bgs. |
| Yokohama,     | 50      |          |

**Starch—**

|             |        |       |
|-------------|--------|-------|
| Ferrol,     | 10 cs. |       |
| Manaos,     |        | 1 ck. |
| Mossamedes, | 6      |       |

**Sulphur—**

|           |      |     |
|-----------|------|-----|
| Demerara, | 4 t. | 7 c |
|-----------|------|-----|



|                       |                |
|-----------------------|----------------|
| <b>White Lead—</b>    |                |
| Bahia,                | 11 c.          |
| B. Ayres,             | 5 cks.         |
| Smyna,                | 10             |
| <b>Zinc Chloride—</b> |                |
| Bombay,               | 4 t. 15 c. £77 |

**MANCHESTER**

Week ending February 19th.

|                                              |                          |
|----------------------------------------------|--------------------------|
| <b>Alkali—</b>                               |                          |
| Tunis,                                       | 10 kgs.                  |
| <b>Aniline Colours—</b>                      |                          |
| Rotterdam,                                   | 1 ck.                    |
| Antwerp,                                     | 2                        |
| <b>Aniline Oil—</b>                          |                          |
| Rouen,                                       | 3 dms.                   |
| Antwerp,                                     | 2                        |
| <b>Barium—</b>                               |                          |
| Rouen,                                       | 6 cks.                   |
| <b>Chemicals (otherwise undescribed)</b>     |                          |
| Ghent,                                       | 862 bgs.                 |
| Alexandria,                                  | 73 cks.                  |
| Beyrout,                                     | 50 dms.                  |
| Hamburg,                                     | 4 kgs.                   |
| Jaffa,                                       | 30                       |
| Lisbon,                                      | 23½ tcs.                 |
| Rotterdam,                                   | 8                        |
| <b>Coal Products (otherwise undescribed)</b> |                          |
| Treport,                                     | 22 cks. 14 cs. 150 brls. |
| Rotterdam,                                   | 73                       |
| <b>Extracts—</b>                             |                          |
| Rouen,                                       | 23 cks.                  |
| <b>Glue—</b>                                 |                          |
| Rotterdam,                                   | 31 cks.                  |
| <b>Indigo—</b>                               |                          |
| Rouen,                                       | 7 cs.                    |
| <b>Iron Sulphate—</b>                        |                          |
| Alexandria,                                  | 100 brls.                |
| <b>Manure—</b>                               |                          |
| Ghent,                                       | 210 t.                   |
| <b>Pitch—</b>                                |                          |
| Antwerp,                                     | 335 t. 6 c.              |
| La Rochelle,                                 | 661 15                   |
| St. Louis Du Rhone,                          | 530                      |
| <b>Soap—</b>                                 |                          |
| Antwerp,                                     | 1 cs.                    |
| <b>Tar Oil—</b>                              |                          |
| Treport,                                     | 26 brls. 2 dms.          |
| Hamburg,                                     | 34                       |
| Rotterdam,                                   | 29                       |
| <b>Varnish—</b>                              |                          |
| Rotterdam,                                   | 1 bx.                    |
| <b>Zinc Ashes—</b>                           |                          |
| Rouen,                                       | 4 cks.                   |

**HULL.**

Week ending February 15th.

|                                          |               |
|------------------------------------------|---------------|
| <b>Alkali—</b>                           |               |
| Antwerp,                                 | 8 cks.        |
| Constantinople,                          | 150           |
| <b>Ammonium Sulphate—</b>                |               |
| Dunkirk,                                 | 711 bgs.      |
| Ghent,                                   | 1,194         |
| Libau,                                   | 45            |
| Rotterdam,                               | 666           |
| <b>Benzol</b>                            |               |
| Rotterdam,                               | 22 cks.       |
| <b>Bleaching Powder—</b>                 |               |
| Fiume,                                   | 38 cks.       |
| Odesa,                                   | 15            |
| <b>Chemicals (otherwise undescribed)</b> |               |
| Antwerp,                                 | 4 cks. 22 cs. |
| Amsterdam,                               | 2 20 pks.     |
| Bombay,                                  | 477           |
| Bordeaux,                                | 10            |
| Copenhagen,                              | 5 41          |
| Constantinople,                          | 1             |
| Christiania,                             | 1 522 stbs.   |
| Danzig,                                  | 66            |
| Gothenburg,                              | 1 ck. 1 7     |
| Hango,                                   | 2 2           |
| Hamburg,                                 | 11 8 190      |
| Konigsberg,                              | 21            |
| Libau,                                   | 14            |
| New York,                                | 25            |
| Rotterdam,                               | 196 75        |
| Reval,                                   | 18 50 1       |
| Stettin,                                 | 39            |
| Trieste,                                 | 6 1           |
| <b>Cottonseed Oil—</b>                   |               |
| Antwerp,                                 | 2,246 c.      |
| Amsterdam,                               | 1,309         |
| Bremen,                                  | 387           |
| Copenhagen,                              | 105           |

|             |       |
|-------------|-------|
| Fiume,      | 80    |
| Gothenburg, | 50    |
| Hamburg,    | 1,445 |
| Konigsberg, | 10    |
| Rotterdam,  | 2,651 |

**Creosote—**

Copenhagen, 10 cks.

**Glue—**

Amsterdam, 10 bgs.

**Linseed Oil—**

Antwerp, 6 c.

Amsterdam, 51

Bombay, 419

Bordeaux, 36

Bergen, 64

Constantinople, 18

Drontheim, 231

Hamburg, 4

Kurrachee, 485

Rotterdam, 50

Stavanger, 254

Trieste, 128

**Mineral White—**

Rotterdam, 10 cks.

**Naphtha—**

Rotterdam, 25 cks.

**Ochre—**

Hamburg, 3 cks.

**Paint—**

Bombay, 5 cks. 364 kgs.

**Painters' Colours—**

Antwerp, 11 cks. 5 cs. 10 dms.

Amsterdam, 11

Bremen, 19

Bombay, 6 55 1,751 pks.

Copenhagen, 31 7 2 3 dms.

Christiania, 2

Drontheim, 4 1 4 pks.

Guernsey, 5

Hamburg, 63 2 5 dms.

Kurrachee, 40 pks.

Libau, 2

Messina, 7 dms.

New York, 25

Ode-sa, 197

Rotterdam, 1 1 pk.

Stettin, 7

Venice, 24

**Pitch—**

Antwerp, 60 t.

Dunkirk, 235

**Starch—**

Copenhagen, 100 cs.

Danzig, 50

Ghent, 5

**Tar—**

Bergen, 6 cks.

Drontheim, 3

Rotterdam, 6

**Turpentine—**

Bombay, 90 dms.

Christiansund, 2 cks.

**Varnish—**

Antwerp, 15 cks. 22 dms.

Amsterdam, 1 2 cs.

Bremen, 1

Dunkirk, 1

Danzig, 3

Gothenburg, 1 1

Hamburg, 2

Libau, 107

**Whiting—**

Amsterdam, 37 cks.

**GLASGOW.**

Week ending February 20th.

|                           |             |
|---------------------------|-------------|
| <b>Acetic Acid—</b>       |             |
| Lisbon,                   | £45         |
| <b>Alizarine Oil—</b>     |             |
| Lisbon,                   | £30         |
| <b>Ammonium Sulphate—</b> |             |
| Antwerp,                  | 101 t. 8 c. |
| Baltimore,                | 50 17       |
| Hamburg,                  | 50 14       |
| <b>Aniline Colours—</b>   |             |
| U.S.A.,                   | £125        |
| <b>Carbonate of Lime—</b> |             |
| Lisbon,                   | £39         |
| <b>Coal Products—</b>     |             |
| Benzol                    | £600        |
| Antwerp,                  | £600        |
| Creosote Oil              | £50         |
| U.S.A.,                   | £50         |

|              |        |
|--------------|--------|
| <b>Pitch</b> |        |
| Genoa,       | £1,470 |
| Antwerp,     | 600 t. |
| Baltimore,   | 45     |
| Amsterdam,   | 297    |
| Rotterdam,   | 24     |
| Sofia,       | 750    |

**Tar**

Rangoon, £64

**Tar Oil**

Rotterdam, 17 t.

**Coal Products (otherwise undescribed)**

Rotterdam, £590

**Dyestuffs (otherwise undescribed)**

Lisbon, £362

**Gelatine—**

Canada, £168

**Iodine—**

Rotterdam, £190

**Linseed Oil—**

Canada, 20 t. 16¼ c.

**Paint—**

Shanghai, £80

**Painters' Colours—**

Rangoon, £214

Singapore, 112

Canada, 35

**Paraffin Wax—**

B. Ayres, £32

**Potassium Bichromate—**

Hogo, £704

Rouen, 197

U.S.A., 350

Christiania, 198

**Potassium Bromate—**

Lisbon, £25

**Potassium Prussiate—**

Paris, 5 t. 8 c.

**Sheep Dip—**

B. Ayres, £75

**Soap—**

Rangoon, 5 t. ¾ c.

Lisbon, 3 4

**Sodium Bichromate—**

Rouen, 5 t. 7½ c.

**Sodium Iodide—**

Rotterdam, £470

**Starch—**

Lisbon, £23

**Sulphate of Lead—**

Christiania, £13

**Sulphuric Acid—**

Rangoon, £336

**Tallow—**

Rotterdam, 12 t. 16 c.

**Treacle—**

Christiania, 18 t. 17 c.

**Ultramarine—**

U.S.A., £70

**White Lead—**

Shanghai, £96

**TYNE.**

Week ending February 15th.

|                            |            |
|----------------------------|------------|
| <b>Alkali—</b>             |            |
| Gothenburg,                | 5 t. 6 c.  |
| Amsterdam,                 | 12 17      |
| Christiania,               | 2 19       |
| <b>Ammonia—</b>            |            |
| Pomaron,                   | 6 c.       |
| <b>Ammonium Carbonate—</b> |            |
| Barcelona,                 | 1 t. 2 c.  |
| <b>Ammonium Sulphate—</b>  |            |
| Antwerp,                   | 50 t.      |
| Hamburg,                   | 20 4 c.    |
| <b>Anthracene—</b>         |            |
| Rotterdam,                 | 37 t. 8 c. |
| <b>Antimony—</b>           |            |
| Hamburg,                   | 2 t. 10 c. |
| <b>Arsenic—</b>            |            |
| Gothenburg,                | 1 t. 15 c. |
| <b>Bleaching Powder—</b>   |            |
| Gothenburg,                | 30 t. 3 c. |
| Rotterdam,                 | 6 9        |
| Copenhagen,                | 1 13       |
| Bergen,                    | 7 15       |
| Antwerp,                   | 60 7       |
| Hamburg,                   | 3 4        |
| Amsterdam,                 | 9 10       |
| <b>Carbolic Acid—</b>      |            |
| Odense,                    | 12 c.      |
| <b>Caustic Soda—</b>       |            |
| Antwerp,                   | 3 t. 15 c. |
| Amsterdam,                 | 11 9       |
| Christiania,               | 8 14       |

**Fluor Spar—**

Gothenburg, 51 t. 10 c.

**Hydrochloric Acid—**

Pomaron, 13 c.

**Linseed Oil—**

Antwerp, 1 t. 4 c.

**Litharge—**

Gothenburg, 1 t. 6 c.

Copenhagen, 1 18

Amsterdam, 10

**Magnesia—**

Barcelona, 14 t.

Hamburg, 4 c.

**Manganese—**

Bilbao, 10 t.

**Manure—**

Genoa, 90 t. 4 c.

**Nitric Acid—**

Pomaron, 5 c.

**Oxalic Acid—**

Barcelona, 5 t. 4 c.

**Paint—**

Pomaron, 7 c.

Ergasteria, 1 t. 4

Copenhagen, 16

Antwerp, 1 10

Hamburg, 1 10

**Soap—**

Pomaron, 3 c.

**Soda—**

Amsterdam, 30 t.

Christiania, 5

**Soda Ash—**

Christiania, 13 t. 4 c.

**Sodium Hyposulphate—**

San Francisco, 38 t. 2 c.

**Sodium Sulphate—**

Gothenburg, 2 t. 18 c.

**Sulphur—**

Gothenburg, 20 t.

Rotterdam, 104 19 c.

Christiania, 49 19

**Sulphuric Acid—**

Pomaron, 3 q.

**Varnish—**

Pomaron, 1 t. 3

Antwerp, 1 t. 5

**White Lead—**

Pomaron, 12 c.

Gothenburg, 5

**GOOLE.**

Week ending February 12th.

|                                              |              |
|----------------------------------------------|--------------|
| <b>Alkali—</b>                               |              |
| Antwerp,                                     | 12 cks.      |
| <b>Chemicals (otherwise undescribed)</b>     |              |
| Ghent,                                       | 1 ck.        |
| Hamburg,                                     | 19           |
| <b>Coal Products (otherwise undescribed)</b> |              |
| Antwerp,                                     | 178 bgs.     |
| Boulogne,                                    | 2 cks. 2 cs. |
| Ghent,                                       | 5            |
| Rotterdam,                                   | 98           |
| <b>Colours—</b>                              |              |
| Boulogne,                                    | 2 cks.       |
| Ghent,                                       | 4            |
| <b>Dyestuffs (otherwise undescribed)</b>     |              |
| Rotterdam,                                   | 46 cks.      |
| <b>Manure—</b>                               |              |
| Antwerp,                                     | 1,000 bgs    |
| Boulogne,                                    | 25           |
| Bruges,                                      | 180          |
| Dunkirk,                                     | 50           |
| Ghent,                                       | 426          |
| Guernsey,                                    | 1,000        |
| Rotterdam,                                   | 100          |
| <b>Pitch—</b>                                |              |
| Dunkirk,                                     | 428 t.       |
| Antwerp,                                     | 185          |

**GRIMSBY.**

Week ending February 15th.

|                                              |                 |
|----------------------------------------------|-----------------|
| <b>Chemicals (otherwise undescribed)</b>     |                 |
| Dieppe,                                      | 2 cks.          |
| Rotterdam,                                   | 34              |
| <b>Coal Products (otherwise undescribed)</b> |                 |
| Dieppe,                                      | 128 cks. 11 cs. |
| Hamburg,                                     | 5 pks. 8 brls.  |
| Rotterdam,                                   | 119 6 dms.      |
| <b>Colours—</b>                              |                 |
| Hamburg,                                     | 3 cks.          |
| Rotterdam,                                   | 2               |



## PRICES CURRENT.

WEDNESDAY, FEB. 26TH, 1896

PREPARED BY MESSRS. HIGGINBOTTOM AND CO., 116, PORTLAND STREET, MANCHESTER.

The values stated are F.O.R. at maker's works, or at usual ports of shipment in U.K. The price in different localities may vary.

## Acids:—

|                                         | £          | s.      | d.      |
|-----------------------------------------|------------|---------|---------|
| Acetic, 25 % and 40 % .. .. .           | per cwt.   | 6/      | & 9/-   |
| " Glacial .. .. .                       | "          | 40/-    |         |
| Arsenic S.G., 2000° .. .. .             | "          | 1       | 2 0     |
| Fluoric .. .. .                         | per lb.    | 0       | 0 3½    |
| Muriatic (Tower Salts), 30° Tw. .. .. . | per bottle | 0       | 0 10    |
| " (Cylinder), 30° Tw. .. .. .           | "          | 0       | 3 0     |
| Nitric 80° Tw. .. .. .                  | per lb.    | 0       | 0 1½    |
| Nitrous .. .. .                         | "          | 0       | 0 1½    |
| Oxalic .. .. .                          | nett       | 0       | 0 3½    |
| Phosphoric, 1750° .. .. .               | "          | 0       | 1 0     |
| Picric .. .. .                          | "          | 0       | 0 11    |
| Sulphuric (fuming 50 %) .. .. .         | per ton    | 15      | 10 0    |
| " (monohydrate) .. .. .                 | "          | 5       | 10 0    |
| " (Pyrites, 168°) .. .. .               | "          | 3       | 0 0     |
| " 150° .. .. .                          | "          | 1       | 5 0     |
| " (free from arsenic, 145°) .. .. .     | "          | 1       | 7 6     |
| Sulphurous (solution) S.G. 1025 .. .. . | "          | 3       | 0 0     |
| Tannic (pure) .. .. .                   | per lb.    | 0       | 1 0     |
| Tartaric .. .. .                        | "          | 0       | 1 2½    |
| Arsenic, white powdered .. .. .         | nett       | per ton | 20 0 0  |
| Alum (loose lump) .. .. .               | "          | 4       | 12 6    |
| Alumina Sulphate (pure) .. .. .         | "          | 4       | 12 6    |
| Aluminoferrous .. .. .                  | "          | 2       | 7 6     |
| Aluminium .. .. .                       | per lb.    | 0       | 2 10    |
| Ammonia, Anhydrous .. .. .              | "          | 0       | 1 3     |
| " 880=28° B. .. .. .                    | per lb.    | 0       | 0 3     |
| " =24° B. .. .. .                       | "          | 0       | 0 2½    |
| " Carbonate .. .. .                     | nett       | "       | 0 0 3½  |
| " Muriate .. .. .                       | per ton    | 22      | 15 0    |
| " (sal-ammoniac) 1st & 2nd .. .. .      | per cwt.   | 39/-    | & 37/-  |
| " Nitrate .. .. .                       | per ton    | 37      | 10 0    |
| " Phosphate .. .. .                     | per lb.    | 0       | 0 6½    |
| " Sulphate (grey) London .. .. .        | per ton    | 8       | 8 9     |
| " (grey) Hull .. .. .                   | "          | 8       | 8 9     |
| Aniline Oil (pure) .. .. .              | per lb.    | 0       | 0 8½    |
| Aniline Salt .. .. .                    | "          | 0       | 0 7½    |
| Antimony .. .. .                        | per ton    | 29      | 15 0    |
| " (tartar emetic) .. .. .               | per lb.    | 0       | 0 7½    |
| " (golden sulphide) .. .. .             | "          | 0       | 0 10    |
| Barium Chloride .. .. .                 | per ton    | 6       | 7 6     |
| " Carbonate (native) .. .. .            | "          | 3       | 10 0    |
| " Sulphate (native levigated) .. .. .   | "          | 42/6    | to 65/- |
| Bleaching Powder, 35 % .. .. .          | nett       | "       | 7 0 0   |
| " Liquor, 7 % .. .. .                   | "          | 3       | 10 0    |
| Bisulphide of Carbon .. .. .            | "          | 12      | 10 0    |
| Chromium Acetate (crystal) .. .. .      | per lb.    | 0       | 0 6     |
| Calcium Chloride .. .. .                | per ton    | 2       | 2 6     |
| China Clay (at Runcorn) in bulk .. .. . | "          | 15/-    | to 30/- |

## Coal Tar Products and Dyes:—

|                                            |               |            |    |    |     |
|--------------------------------------------|---------------|------------|----|----|-----|
| Alizarine (artificial) 20 % .. .. .        | nett          | per lb.    | 0  | 0  | 7½  |
| Magenta .. .. .                            | "             | "          | 0  | 3  | 9   |
| Anthracene, 30 % A, f.o.b. London .. .. .  | per unit      | per cwt.   | 0  | 0  | 11½ |
| Benzol, 90 % .. .. .                       | "             | per gallon | 0  | 2  | 0   |
| " 50/90 .. .. .                            | "             | "          | 0  | 1  | 8   |
| Carbolic Acid (crystallised 40°) .. .. .   | "             | per lb.    | 0  | 0  | 8½  |
| " (crude 60°) .. .. .                      | "             | per gallon | 0  | 2  | 3   |
| Creosote (ordinary) .. .. .                | "             | "          | 0  | 0  | 1½  |
| " (filtered for Lucigen light) .. .. .     | "             | "          | 0  | 0  | 2   |
| Crude Naphtha 30 % @ 120° C. .. .. .       | "             | "          | 0  | 0  | 10  |
| Grease Oils, 22° Tw. .. .. .               | "             | per ton    | 2  | 10 | 0   |
| Pitch, f.o.b. Liverpool or Garston .. .. . | "             | "          | 1  | 13 | 6   |
| Solvent Naphtha, 90 % at 160° .. .. .      | "             | per gallon | 0  | 1  | 6   |
| " Lucigen" and "Wells" Oils .. .. .        | "             | "          | 0  | 0  | 2½  |
| Copper .. .. .                             | "             | per ton    | 46 | 2  | 6   |
| " Sulphate .. .. .                         | "             | "          | 17 | 5  | 0   |
| " Oxide (copper scales) .. .. .            | "             | "          | 41 | 10 | 0   |
| Glycerine (crude) .. .. .                  | "             | "          | 37 | 10 | 0   |
| " (distilled S.G. 1250°) .. .. .           | "             | "          | 75 | 0  | 0   |
| Iodine .. .. .                             | nett, per oz. | "          | 0  | 0  | 7½  |
| Iron Sulphate (copperas) .. .. .           | "             | per ton    | 1  | 5  | 0   |
| " Sulphide (antimony slag) .. .. .         | "             | "          | 2  | 0  | 0   |
| Lead (sheet) for cash .. .. .              | "             | "          | 12 | 15 | 0   |
| " Litharge Flake (ex ship) .. .. .         | "             | "          | 14 | 0  | 0   |
| " Acetate (white " ) .. .. .               | "             | "          | 21 | 10 | 0   |
| " brown " ) .. .. .                        | "             | "          | 16 | 0  | 0   |
| " Carbonate (white lead) pure .. .. .      | "             | "          | 16 | 0  | 0   |
| " Nitrate .. .. .                          | "             | "          | 19 | 0  | 0   |

|                                         |              |    |    |    |
|-----------------------------------------|--------------|----|----|----|
| Lime, Acetate (brown) (ex ship)         | per ton      | 4  | 15 | 0  |
| " (grey) (ex ship)                      | "            | 7  | 10 | 0  |
| Magnesium (ribbon and wire)             | per oz.      | 0  | 2  | 7  |
| " Chloride (ex ship)                    | per ton      | 2  | 7  | 0  |
| " Carbonate                             | per cwt.     | 1  | 17 | 0  |
| " Hydrate                               | per ton      | 17 | 0  | 0  |
| " Sulphate (Epsom Salts)                | per ton      | 2  | 15 | 0  |
| Manganese, Sulphate                     | "            | 16 | 10 | 0  |
| " Borate                                | per cwt.     | 2  | 15 | 0  |
| " Ore, 70 %                             | per ton      | 3  | 10 | 0  |
| Methylated Spirit, 61° O.P.             | per gallon   | 0  | 1  | 9  |
| Naphtha (Wood), Solvent                 | "            | 0  | 3  | 0  |
| " Miscible, 60° O.P.                    | "            | 0  | 3  | 7  |
| Oils:—                                  |              |    |    |    |
| Cotton-seed                             | per ton      | 17 | 10 | 0  |
| Linseed                                 | "            | 20 | 15 | 0  |
| Petroleum, American                     | per gallon   | 0  | 0  | 7  |
| Stearine                                | per ton      | 24 | 0  | 0  |
| Phosphorus (yellow)                     | per lb.      | 0  | 2  | 2  |
| " (red)                                 | "            | 0  | 2  | 8  |
| Potassium (metal)                       | per oz.      | 0  | 3  | 7  |
| " Bichromate                            | nett per lb. | 0  | 0  | 4  |
| " Carbonate, 90% (ex ship)              | per ton      | 17 | 5  | 0  |
| " Chlorate                              | per lb.      | 0  | 0  | 4  |
| " Cyanide, 98%                          | "            | 0  | 1  | 2  |
| " Hydrate (Caustic Potash) 90 %         | per ton      | 24 | 10 | 0  |
| " " (Caustic Potash) 75/80 %            | "            | 20 | 10 | 0  |
| " " (Caustic Potash) 70/75 %            | "            | 19 | 10 | 0  |
| " Nitrate (refined)                     | per cwt.     | 1  | 1  | 6  |
| " Permanganate                          | per cwt.     | 3  | 7  | 6  |
| " Prussiate Yellow                      | per lb.      | 0  | 0  | 7  |
| " Sulphate, 90 % (ex ship)              | per ton      | 9  | 15 | 0  |
| " Muriate, 80 % (do.)                   | "            | 8  | 10 | 0  |
| Silver (metal)                          | per oz.      | 0  | 2  | 7  |
| " Nitrate                               | "            | 0  | 2  | 7  |
| Sodium (metal)                          | per lb.      | 0  | 2  | 11 |
| " Carb. (refined Soda-ash) 48 %         | nett per ton | 4  | 15 | 0  |
| " " (Caustic Soda-ash) 48 %             | "            | 4  | 5  | 0  |
| " " (Carb. Soda-ash) 48 %               | "            | 4  | 0  | 0  |
| " " (Alkali) 58 %                       | "            | 3  | 15 | 0  |
| " " (Soda Crystals)                     | "            | 2  | 2  | 6  |
| " Acetate (ex-ship)                     | "            | 14 | 10 | 0  |
| " Arseniate, 45 %                       | "            | 13 | 10 | 0  |
| " Chlorate                              | per lb.      | 0  | 0  | 6  |
| " Borate (Borax)                        | net, per ton | 19 | 10 | 0  |
| " Bichromate                            | per lb.      | 0  | 0  | 3  |
| " Hydrate (77 % Caustic Soda) (f.o.b.)  | net pr. ton  | 9  | 7  | 6  |
| " " (74 % Caustic Soda)                 | "            | 8  | 10 | 0  |
| " " (70 % Caustic Soda)                 | "            | 7  | 10 | 0  |
| " " (60 % Caustic Soda)                 | "            | 6  | 10 | 0  |
| " " (60 % Caustic Soda, cream) (f.o.b.) | "            | 6  | 7  | 6  |
| " Bicarbonate                           | "            | 6  | 10 | 0  |
| " Hyposulphite                          | "            | 6  | 10 | 0  |
| " Manganate, 30%                        | "            | 16 | 0  | 0  |
| " Nitrate (95 %) ex-ship Liverpool      | per cwt.     | 0  | 8  | 0  |
| " Nitrite, 98 %                         | per ton      | 30 | 0  | 0  |
| " Phosphate                             | "            | 13 | 5  | 0  |
| " Silicate (glass)                      | per ton      | 4  | 10 | 0  |
| " (liquid, 100° Tw.)                    | "            | 3  | 10 | 0  |
| " Stannate, 40 %                        | per cwt.     | 3  | 2  | 9  |
| " Sulphate (Salt-cake)                  | per ton      | 1  | 7  | 6  |
| " (Glauber's Salts)                     | "            | 1  | 10 | 0  |
| " Sulphide                              | "            | 7  | 15 | 0  |
| " Sulphite                              | "            | 5  | 5  | 0  |
| Strontium Hydrate, 100%                 | "            | 8  | 10 | 0  |
| Sulphocyanide Ammonium, 95 %            | per lb.      | 0  | 0  | 6½ |
| " Barium, 95 %                          | "            | 0  | 0  | 4½ |
| " Potassium                             | "            | 0  | 0  | 7  |
| Sulphur (Flowers)                       | per ton      | 6  | 15 | 0  |
| " (Roll Brimstone)                      | "            | 5  | 0  | 0  |
| " Brimstone: Best Quality               | "            | 3  | 12 | 6  |
| Superphosphate of Lime (26%)            | "            | 2  | 7  | 6  |
| Tallow                                  | "            | 22 | 10 | 0  |
| Tin Crystals                            | per lb.      | 0  | 0  | 5½ |
| " English Ingots                        | per ton      | 64 | 10 | 0  |
| Zinc (Spelter)                          | "            | 15 | 0  | 0  |
| " Chloride (solution, 100° Tw.)         | "            | 5  | 5  | 0  |



# THE CHEMICAL TRADE JOURNAL

AND  
OIL, PAINT and COLOUR REVIEW.

Publishing Offices: 32, BLACKFRIARS STREET, MANCHESTER.

No. 459.

SATURDAY, MARCH 7, 1896.

Vol. XVIII.

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## LATE ADVERTISEMENTS.

### TENDER.

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THE Gas Committee of the above Council are prepared to receive TENDERS for the purchase of the surplus TAR and AMMONIACAL LIQUOR to be produced at their Gas Works, for One Year, commencing April 1, 1896.

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February 26, 1896.

J. R. SMITH,  
Clerk to the Council.

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## CURRENT TOPICS.

CHLORATE OF POTASH AND ELECTRICITY.

A PROCESS seems to count for nothing in the United States unless it can be made out to "lick all creation." It appears that a plant is being put down at Niagara for the electrolytic production of chlorate of potash by the Blumenberg process, which is based upon the direct action of the electric current on chloride of potash solution. The works, it is expected, will be ready by July. Though we have no reason to doubt the ultimate success of the process, so far everything that is said must be in the future tense, and should, we think, be couched with due consideration for the contrasts that will probably be made when it is possible to speak of the achievements of this process in the past tense. Such a course does not lend itself to the "booming" of a process however, and consequently a paragraph has been set going around the technical and general press to the effect that already the very commencement of these new works has led to a heavy drop in the price of chlorate, on the part of the main producers, the United Alkali Company, Limited. The paragraph, however, goes one further, and adds, "but the new manufacturers will probably undersell them in all the markets of the world." All this is of course very interesting, and it is always well to remember, in these days of rapid development, that you will not be far from the truth if you act on the principle that nothing is impossible. The originator of this little boom, however, was a little too zealous, for his anxiety to demonstrate the revolution the new process would work was greatly in excess of his information. According to the figures given, which show a reduction of about 60 per cent., the selling price still stands nicely above the value that has been ruling for the last five or six months. On this showing no doubt the new producers will be able to undersell, and probably, we are inclined to think, be undersold again. Without this lapse the paragraph might have done the work it was set to, but the introduction of such figures was worse than a crime—it was a blunder—and branded the whole as unreliable.

The electrolytic production of chlorate is nothing very new, as it has been produced on the Continent for some time on a commercial scale, and, though the power of Niagara is a great advantage to an electrical process, we have reason to believe that, should it be necessary, the principal producers in this country are not wholly unprepared to develop a process that will not depend for its success upon the advantages of location and access to Niagara.

There is also another point, and that is the growth of the demand. New processes do not present very serious difficulties to existing makers when there is a prospect of the outlet extending, and with Japan alone, although the totals for the last two years do not show any material increase, they make



a very striking contrast with the figures for 1892. With the growth of this rapidly-rising country there is cause to anticipate an increased demand, nine-tenths of which is already met from this country.

#### THE TESTING OF COMPRESSED GAS CYLINDERS.

As was foreshadowed in our annual summary of the doings of last year, the Fenchurch-street gas cylinder explosion is likely to result in the formulation of special legislation affecting the manufacture and testing of gas cylinders.

The Departmental Committee appointed by Mr. Asquith have concluded their inquiries and completed their report, which embodies many important proposals.

In the first place it is suggested that all factories producing compressed or liquified gases shall in future be subject to periodical inspection by the officials of a suitable department of either the Home Office or the Board of Trade. It is proposed to invest the inspectors with power to examine the specifications to which the cylinders are made; to inspect the methods employed to ensure proper thickness and thorough annealing; to test gauges and other appliances; and to examine the records of tests and require such alterations as may be found necessary for the execution of adequate tests.

The advantage manufacturers are to gain for submitting to this semi-inquisitorial surveillance is that, if they comply with the requirements of the inspectors, their works will be certificated, and they will be authorised by the Government to test and mark cylinders. On the whole this is by no means a one-sided arrangement, though the trade may be disposed to take exception to the proposal to issue special certificates to firms that are willing to undertake testing only, provided they are in no way directly interested in the manufacture of the cylinders. We should also be surprised if an effort is not made, before these proposals become law, to insert a provisional clause relieving makers from all claims for damages in the event of an accident with a cylinder bearing the Government stamp. Whether they would carry the point is another matter.

Apart from and beyond all this, however, there is one proviso that we would have great stress laid upon. The inspection of these works must not be relegated to any of the "unemployed" who may chance to be available in some one or other of the Home Office or Board of Trade Departments. Save under very exceptional circumstances—honourable and most estimable of gentlemen though they be—the inspectors must not be retired Army or Navy men. They must be men as individually and exceptionally qualified for their important and delicate work as the inspectors under the Alkali, &c., Works Act. Indifferent inspection will sicken the inspected, and stultify this effort to protect the public by making the law and its executors a byword.

#### THE GEIPEL STEAM TRAP.

IT is often advantageous to use a number of small steam traps in lieu of one or two large ones, and small traps are particularly useful for use on marine engine, cylinder jackets, &c. The following description of this trap as made by the Shillingford Works Co., Limited, Wallingford, Berks, will show how applicable the trap is to the requirements of steam users, whether for power or drying, &c.

The trap is the patented invention of Mr. Geipel, and is constructed on the thermostatic principle in which the difference between the heat of the steam and the heat of the water actuates a valve to discharge the collected water.

This principle has long been recognised to be the best, but the difficulty with most traps of this class has been that the motion set up by the expansion and contraction has been so exceedingly small. In some cases also the want of arrangements for rapidly adapting the trap for steam at varying pressures has not been satisfactorily met, and has been the cause of failure. These two difficulties are overcome in the Geipel Trap, and experience of its working shows that the best results are achieved by it.

The inventor is fortunate in having secured an appreciative acknowledgment from Professor Kennedy, who has had one of the "Traps" working for some time. The Babcock and Wilcox Company, amongst many others, have shown their opinion merits by installing the trap in considerable quantities.

As regards the construction of the "Geipel" Trap, it will from Figs. 1 and 2 that the expansion parts are arranged as that of an isosceles triangle, by which device a considerable motion is imparted to the apex for very small changes in the length of the parts; moreover, there is a certain amount of elasticity in the parts which there is not in the case of the direct thrust generally adopted in expansion traps, and which has hitherto resulted in cutting the face. The sectional illustration, Fig. 2, shows the method adopted.



FIG. 1.

Mr. Geipel in putting his invention into practice. The lower pipe is connected to the steam pipe, the upper iron pipe forms the discharge. These two pipes form the two sides of the isosceles triangle above-mentioned, the valve seat D being at the apex. The spindle C butts against the lever. When cold the brass pipe contracts, the apex D is drawn down so that the valve is fully open and the water is discharged. As soon as steam enters the brass pipe it expands and raises the apex, when the valve is closed. The valve may be set to blow off at any pressure desired, adjustment A is provided. In addition to this, when it is desired to blow through, the valve may be opened by hand by merely pulling the lever. The valve may be readily examined by unscrewing B; this is a desideratum, as it is a common occurrence for the valve in all steam traps to become choked with sediment or to require adjustment otherwise.

The trap is very suitable for fixing on the bedplates of engines, which purpose existing traps are generally too bulky. When fixing the trap for use place the trap preferably two or four feet from the steam pipe. Connect the lower or brass pipe with the steam pipe or vessel to be drained by at least three feet of pipe, in which a valve or cock may be inserted. The top or iron pipe should be connected with the



FIG. 2.

or it may discharge into a tank at any height within the limits equivalent to the pressure of the steam. In the latter case a return valve is preferable on the outlet to prevent the water from being drawn back into the steam pipe when cold. When the trap discharges into a tank it is an advantage to have a three-way cock on the branch being arranged to deliver to the atmosphere in order that the working of the trap may be inspected.

When fixing to new steam pipes it is well to blow through the connection to the trap before the latter is fixed, in order to clear away dirt in the pipes.

To adjust the trap, screw down the nut A on the lever until steam blows through, then slack back until steam is shut off by the nut. The trap will then only discharge water.

If any steam should blow through, the valve should be examined which may be done by unscrewing the cover B. Examine the valve seat and clean it occasionally after first starting. The valve is reset by the working of the trap may be seen quickly by throwing cold water over it whilst steam is on.

LIVERPOOL SALT SHIPMENTS.—The clearances of salt from Liverpool to Calcutta between January 1 and February 29 amount to 22,542 tons, the clearances from other ports being 4,450 tons. The clearances from Liverpool to other East Indian ports total 16,000 tons. The probable shipments of salt during March amount to 16,000 tons.



## The Patent List.

List is compiled from Official sources in the Manchester Laboratory, under the immediate supervision of T. Davis and Alfred R. Davis, who report professionally value of Chemical Patents.

### APPLICATIONS FOR ENGLISH LETTERS PATENT.

us Cement. W. Wardle. 3,519. February 17.  
n of Manganese and Preparation of Compounds. J. H. Torres. February 18.  
and Purifying Water. W. Leach. 3,616. February 18.  
CO<sub>2</sub> from Lime Kilns. A. D. Delsemme. 3,652. February 18.  
R. McKenzie. 3,725. February 18.  
ides from Sulphocyanides. J. T. Conroy, F. Hurter, and J. Brock. February 20.  
ure of Zinc Oxide. W. Hampe and C. Schnabel. 3,906. Feb. 20.  
id from Pyroligneous Salts. W. P. Thompson. 3,987. Feb. 21.  
or Condensing Towers, etc. W. P. Thompson. 4,073. Feb. 22.

### ABSTRACTS OF LATEST COMPLETE SPECIFICATIONS.

Abstracts are specially prepared for the Chemical Trade Journal RIGHTS of publication are RESERVED. This is the earliest abstracts of Chemical and allied patents accessible to the

nd Apparatus for Extracting Colouring Matter from Dyewoods. Mafat, 17, Rue de Lions, St. Paul, Paris. Eng. Pat. 6,967. April 4,

Kohlrausch and other processes perfect extraction of the matters is impossible owing to the presence of air in the pores of wood. In this process a series of five vessels, in the shape of a trustum wider at the bottom than the top, is employed, being false bottoms on which the chips rest, and beneath which a funnel is situated. These vessels are exhausted by an air pump or so that the extraction is carried out under a vacuum, while the of the liquors is so arranged that the wood is boiled successively with juices of decreasing strength and finally with water. There is a drawing showing the arrangement of five vessels, and the steam, water, and juice pipes for the same.

Process of Making Oxide of Lead. H. H. Lake, 45, Southampton Row, London (communicated by T. Benfield, 324, Mount Prospect, Newark, Essex County, New Jersey, U.S.A.). Eng. Pat. 25,009. 1895.

Lead is treated so as to reduce it to a fine or granulated state, stirred and blown with a current of air in a tank of water, partially oxidizing the lead. The partially oxidized product in a tank is run off (the metallic lead settling out rapidly by reason of its gravity, or else a suitable separator is employed) and again in a second vessel to the action of an oxidizing gas. The product obtained is claimed to be superior to that produced by the ordinary process, owing to the complete absence of any metallic lead, and the absence of acids which cause crystallization. There is one drawing of the plant used. The tanks are round and fitted with a stirring mechanism consisting of several radial arms carrying hollow ploughs. The shaft of the shaft carrying the arms is hollow, and through it by branch pipes air or oxygen is conveyed to the hollow ploughs. The feature claimed is the joint action of the air and water on lead under the special conditions of agitation and comminution.

Process for Obtaining Caustic Soda, Hydrogen, and Chlorine by Electrolysis of Sea Water and in Treating the By-products thereof during such Process. G. B. Baldo, Via Standion, No. 15, Vienna, Austria. Eng. Pat. 27,106. Oct. 7, 1895.

Sea water is concentrated to 1.06 Sp. Gr., and then electrolysed in a cell, briefly described below. The chlorine and hydrogen are dealt with in the usual way, while the sodium that tends to be taken up by the negative electrode is taken up by water to form caustic soda. The residue in the cell still contains undecomposed salt and free acid. It is distilled, and the first three-fourths of the distillate is collected. The last quarter is collected, and consists of weak solution. The dry residue from the distillation, consisting of sodium sulphate and salt, is heated to a redness in iron vessels. The vapours are passed through barium chloride to remove all sulphuric acid, and the vapours of pure HCl gas passed through the weak solution previously obtained, producing pure hydrochloric acid of any desired strength.

There is one sectional drawing of the electrolyzing cell. A porous pot containing a carbon electrode is surrounded by a metal vessel acting as the negative electrode, the whole being enclosed in a water jacket. The concentrated sea water is placed in the porous pot, and pure water in the space between the porous pot and metallic electrode. Charging tubes and exits for the gases are provided, as well as draw-off cocks to remove the partially decomposed sea water and weak caustic soda solution.

### Improvements in the Electrolytic Manufacture of Alkali-Chlorate.

Wetter, 433, Strand, W.C. (communicated by The Elektrizitäts-Aktiengesellschaft vormals Schuckert and Co., Nürnberg, Bavaria). Eng. Pat. 7,364. April 10 1895.

The process is carried out without the use of diaphragms and at a high temperature. By preference a saturated solution of potassium chloride to which 2 or 3% of potassium bicarbonate has been added is electrolysed in an iron or earthenware vessel provided with carbon electrodes at a temperature of 40° to 100°C and a current density of 500- to 1,000 amperes per square metre. Carbon-dioxide is passed in simultaneously. The yield of chlorate is maximum at first, and diminishes as the contents of chlorate increase, so that the duration of the process is regulated accordingly. Owing to the very deleterious action of even a very small percentage of hypochloric acid (*sic*) the conditions of this process are so arranged that the small quantity of carbonate employed is sufficient to form chloric acid immediately, at the given current density and temperature.

### Improvements in the Manufacture of Washing Powders.

A. Warwick, 6, Watford Villas, Battersea; J. Smith, 146, Disraeli-road, Putney, and P. W. Nicolle, 46, Bridge-road West, Battersea. Eng. Pat. 2,471. Feb. 5, 1895.

Sodium benzoate, which is a powerful non-poisonous disinfectant, is used in the preparation of dry soaps, thereby giving the latter valuable antiseptic and germicidal properties. The powder is prepared in accordance with patent 1,088/94, with the addition of 0.25% to 1% by weight of the sodium benzoate. Other alkaline benzoates can be employed.

## MAKING PETROLEUM-TIGHT JOINTS.

THE following useful notes have been communicated by Mr. Hiram S. Maxim to the *Engineer* on the materials and methods for making tight joints in petroleum pipes and vessels:—"Many have supposed it to be quite impossible to make a petroleum joint that would not leak, especially with the light varieties, such as naphtha and gasoline, when subjected to both heat and pressure. However, as a matter of fact, it is no more difficult to make a petroleum-proof joint than a water-proof joint. In making up steam or water joints we naturally employ something which is insoluble in water. If an ordinary steam or gas-fitter is asked to make a petroleum-tight connection, he is sure to employ red lead and oil, and for a gasket or washer he is equally sure to use india-rubber, both oil and india-rubber being quite soluble in petroleum. In my experience I find that a joint which is screwed together dry is less apt to leak petroleum than a joint made up of the orthodox red lead and oil. To make a good petroleum joint with common iron pipes, a very good system is to heat both the male and female threads sufficiently to dissipate every trace of oil; then make the joint up with thick shellac varnish, which may be combined with ordinary dry vermilion or even Venetian red. A joint of this kind I have found to stand well. A very good joint can also be made with ordinary yellow bar soap rubbed into the threads of the pipe, the grease first being removed. Treacle, honey, glue, mucilage, or glycerine are quite petroleum proof. For a stuffing-box, ordinary wicking saturated with common yellow bar soap may be safely employed. Canvas saturated with shellac varnish makes a good washer, but soft metallic washers are better. A very good flexible diaphragm for a regulator may be made of closely-woven cotton fabric varnished on both sides with a compound of gelatine and glycerine. About equal parts by weight make a very tough and elastic compound. Wooden vessels, bags, &c., may also be made petroleum-tight by saturating or varnishing with this compound. As a rule, all substances which are soluble in water are quite insoluble in petroleum. For stuffing-boxes for standing both water and petroleum, castor oil may be employed, as this peculiar oil seems quite insoluble in either water or petroleum."

THE ARKLOW EXPLOSION.—The official report of Colonel A. Ford on the fatal explosion of gun-cotton at Messrs. G. Kynoch and Co.'s factory, Arklow, states that the circumstances afford at least good ground for suspicion that it was the outcome of deliberate malice.



## MERSEY AND IRWELL JOINT COMMITTEE.

THE usual monthly meeting of this committee was held last Monday, at 44, Mosley-street, Manchester, Mr. Alderman Thompson presiding. The report of the Chemical Sub-committee included the following recommendation:—"Your Sub-committee have considered the advisability of the re-appointment of Sir Henry Roscoe, and they recommend that, during the ensuing twelve months, he be appointed chemical adviser to the Joint Committee at an inclusive salary of £725, such salary to cover travelling and other expenses. The Sub-committee also recommend that a special grant of £101. 0s. 11d. be made to Sir Henry Roscoe for special services rendered by him."

Mr. T. W. Killick, in the absence of the chairman of the Sub-committee (Mr. John Brierley), moved the adoption of that part of the report of the Sub-committee quoted above. They had in the past, he said, paid Sir Henry Roscoe £700 per annum and travelling expenses. As the average of the latter had been considerably more than £25., the Sub-committee thought it would be an advantage to give the salary now proposed, to be inclusive of travelling expenses. The Sub-committee felt very strongly that it was advisable to retain the services of Sir Henry Roscoe. His name had greater weight than that of any other chemist they could employ, and the work he had done for the committee had given satisfaction. With regard to the special grant, he mentioned that the sum really represented certain expenses incurred by Sir Henry Roscoe during the last two years. In answer to a remark by a member of the committee, Mr. Killick further said that if Sir Henry Roscoe were called in by other authorities who were in conflict with the committee, those authorities consulted him knowing that he was the chemical adviser of the committee.

Mr. Hunter (Moss Side) seconded the motion.

Mr. Alderman C. Brierley (Bury) said he had no complaint to make with regard to Sir Henry Roscoe's services in the past, but he thought the time had arrived when the Committee ought to reconsider its position with regard to their appointment of a chemical specialist. He moved as an amendment that this matter be referred back to the Sub-committee, with the recommendation that they should consider the advisability of appointing a chemist who should devote the whole of his services to the Joint Committee.

Mr. Alderman Noton (Oldham) seconded the amendment. Sir Henry Roscoe's services, he said, could be got if they were wanted on any special occasion. With regard to travelling expenses, he contended that they should be allowed only from Manchester, and not from London.

Mr. Alderman Cheetham (Rochdale) supported the amendment.

Mr. Killick did not agree with Mr. Brierley as to the work of the chemist in the future. That work, he thought, would be greater than in the past. Their action, as far as they had gone, had chiefly been in respect of pollution perceptible to the eye and nostrils. When they might be coming on debatable ground, the Sub-committee did not think they should give up Sir Henry Roscoe.

The Chairman remarked that as the chairman of the Sub-committee was detained by public duties elsewhere, it would be rather hard, after he had carefully considered the matter, if they should pass a resolution over his head.

In the course of further discussion,

Mr. Alderman Clay (Manchester) said he understood that, instead of the work being done by Sir Henry Roscoe, it was done by a young man, whom the Committee provided with a room for the purpose. The unfortunate part of the position was that they were not practically their own masters. He thought the time had arrived when they ought to have their own chemist under their absolute control, and if they wanted to call in men eminent for their names and position they could always get them by paying properly for their services. He supported the amendment.

In answer to Mr. Alderman Hopkinson (Manchester) the Acting Clerk said the item of £101. for "special services" was for travelling expenses and board and lodgings, but if entered as such it would be surcharged. If entered as "special services" it would be allowed.

Mr. Alderman Hopkinson said this reminded him of a case where an item was objected to when entered as "cab hire," but was allowed when entered as "cabbage." (Laughter.)

In the voting the amendment was adopted by eight votes against six. It was agreed, further, that the matter should be dealt with by the General Purposes Committee.

The Committee proceeded to consider in detail reports relating to complaints against local authorities and others in respect to river pollution. It was reported by the Consulting Sub-committee in regard to Stalybridge Corporation, Dukinfield Urban District Council, and Denton Urban District Council that the orders of court against these authorities expired some time ago, and no application had yet been made for an extension of time. The chief inspector reported that in each case the progress made with the construction of the works was

very unsatisfactory, and it was recommended that the C instructed to take further proceedings against these authorities apply for penalties against them for non-compliance with the court.

The recommendation was adopted, Mr. Killick (chairman sub-committee) observing that while some improvement was not in the state of the Irwell, there was none in the state of the Mersey.

In connection with a complaint against the Kersal Bleaching Works, it appeared that it was a question whether the local authority the company should undertake the works. If the authority the company, it was stated, would; and the matter was adjourned.

Complaints had been made to the committee about a heavy deposit of mud at Pomona Docks, in consequence of the state of the Mersey, and Mr. Hunter, as representing the district, moved the chief inspector be instructed to report on the subject. This was seconded, and agreed to.

## Legal Intelligence.

HIGH COURT OF JUSTICE.  
CHANCERY DIVISION.

(Before Mr. Justice Stirling.)

THE ATTORNEY-GENERAL AND THE ERITH URBAN DISTRICT COUNCIL  
v. THE THAMES FISH GUANO AND OIL COMPANY.

This was a motion for an injunction to restrain the defendant carrying on a fish manure manufactory at Belvedere, near Erith, to cause a nuisance. It appeared that in 1882 the Erith Local Authority had granted a licence to a Mr. Johnston to carry on business in question, which consisted of making artificial manure from putrid fish and other refuse. In 1887 the business was acquired by the defendant company and carried on by them for some time. The company was under a contract with the Fishmongers' Company to remove condemned fish from Billingsgate Market, for which they received a salary. Subsequently, on the application of the General Assets Company, who were holders of debentures of the defendant company, a Mr. Dixon was appointed receiver and manager of the business, and he had since carried it on. It was alleged that the machinery had allowed to fall into a bad state of repair, and consequently noxious fumes and vapour escaped from the manufactory, and volumes as to cause a serious nuisance to the neighbourhood. The smell from the works was so bad as to make people ill, and pungent that it could be perceived at a distance of two miles. Nuisance was not denied, but the case for the receiver was that he had done the best he could in carrying on the business. He had entered into a contract with Mr. Johnston, who was now acting as his agent for the sale of the business to him subject to a condition avoiding the contract in the event of an injunction being granted against the company. He asked the Court, therefore, if an injunction was granted to suspend the operation of it so as to afford an opportunity of carrying out necessary repairs and alterations.

Mr. Justice Stirling said that he must grant an injunction. The existence of the nuisance was clear. It was caused by the defendant company. Dixon in his capacity of receiver for the debenture holders. The reason suggested why an injunction should not be granted was that the contract for the sale of the business to Mr. Johnston might be rescinded; but his Lordship could not permit the continuance of the nuisance merely for the sake of putting money into the pocket of the debenture-holders.

Ultimately Mr. Dixon undertook to use his best endeavours to carry on the business so as to cause as little nuisance as possible, and that undertaking—

His Lordship suspended the operation of the injunction until the next day in next sittings. He also stayed further proceedings against the defendant company and the General Assets Company.

## QUEEN'S BENCH DIVISION.

(Before the Lord Chief Justice and a Special Jury.)  
CHRISTIE v. FOX AND OTHERS.

## THE LEEDS WATER GAS CASE.

This was an action brought to recover £2,664. 9s., damages for a fraudulent conspiracy, whereby the plaintiff was induced to purchase shares in the British Water Gas Company, Limited, whereby the sum in question.

There appeared for the plaintiff Mr. Cock, Q.C., Mr. McCauley, and Mr. T. M. Whitehouse; Sir Edward Clark, Q.C., Mr. Q.C., Mr. H. F. Boyd, and Mr. Colefax appeared for the defendants; the Right Hon. H. H. Asquith, Q.C., and Mr. Asquith appeared for Bernal Bagshaw; Mr. Greene, Q.C., Mr. Morten, and Mr. Ernest Bowen Rowlands appeared for Messrs. Fox and Mr. E. H. Connot for Cottam, the other defendant.



ock opened the case. The inquiry, he said, would be one of the importance—to the plaintiff because he had lost some and to the defendants both on pecuniary grounds and in connection with the issues raised as to character. It was also important to the plaintiff as relating to the liability of those who conspired to "rig" the market in shares. The plaintiff was a man of means, of no occupation, and there were five defendants:—Samson Fox, who had been a partner and company promoter, and had been guilty of most misconduct in the attempt to obtain money from the public—an attempt which had been most lamentably successful; John Charles, a professional company promoter, who had taken refuge in the Bankruptcy; John Hyde, the elder, and John Hyde, the younger, formerly members of the Stock Exchange, from which they had been expelled; and Bernal Bagshawe, the nephew and right-hand man of Samson Fox. The British Water Gas Company, Limited, was formed, and was never intended to have, any genuine business; it was formed upon the market for the purpose of speculating in the shares of the British Water Gas Company, Limited, and for the purpose of entering the ends of the conspiracy in which these defendants, and all promoters, were concerned. The company proposed to manufacture water gas out of water, a process which was not only for certain limited purposes. Steps were taken early to bring forward the water gas question in the works of a Mr. Wilson, at Stafford, where the water gas generators had been manufactured, and various worthless patents were acquired. The prospectus was issued on March 10, 1888, containing misleading statements with regard to the Stafford works and as to the patents which had been obtained. It was also presented that the system had been in actual use and had been successful. As a fact, some experiments had been made at some Leeds, in which Fox was interested, and had proved an utter failure. The company was registered on April 1, 1889, and in March 1889, the company were communicating with brokers in various parts of the country, to whom they offered commission for the placing of shares, asking their customers to send applications. These applications were in a very curious form, asking them to apply for three times as many shares as they wanted, adding that they would undertake only to sell their shares till after the special day of settlement on the Stock Exchange. Nearly the whole of the shares were thus tied up, and the price began to fall. The plaintiff received a prospectus, and invested in shares later, but did not apply for shares. The British Water Gas Company for various districts, rights which had no existence at all. The shares of these subsidiary companies were valued at £600,000, and this, added to the "leakage" of shares to the shareholders of the British Water Gas Company, caused a fall in the price. It became necessary to keep the price up. There was a meeting on May 8 of those interested, at which Fox, Cottam, and others were present, and they agreed to purchase shares at a price under 19 or at 19 premium. Shares to be purchased in the name of Mr. Samson Fox. During the next month about 100,000 shares were so purchased. The special settlement was on May 15, when the price was falling. In November the company, from which the plaintiff had paid a dividend of 5 per cent, but on November 15 it had paid no further dividend, and it went into voluntary liquidation. The subsidiary companies had expired previously. Mr. Wade said that the experiments made with the water gas process had failed. Up to that time he had no experience whatever in the manufacture of water gas. For lighting purposes and for smelting purposes it was practically useless. Mr. Wade, formerly a member of the Institute of Mechanical Engineers, gave evidence as to selling his works at Stafford to Mr. Fox for £7,000, and some shares. He agreed to sell his works for £7,000, and some shares. He saw the list of firms set out in the prospectus. He saw the list of firms set out in the prospectus. Attention was called to that he knew that those firms were interested, and he spoke to Mr. Cottam on the subject. He told him that while the statements as to the firms were perfectly correct, the general public would jump at the conclusion that they were interested in the water gas. Mr. Cottam replied that he thought he had more experience in drawing prospectuses than he (witness) had, and would take the responsibility of having done so. His (witness's) was an entirely different one from Fox's system. Witness, however, said the manufacture of water gas had gone on in this country for years—more than half a century. He believed the system of

the British Water Gas Syndicate was one that could be used commercially for illuminating purposes. He meant that money could be made by it as compared with ordinary gas.

In answer to his lordship, witness said that he had seen it in Moravia in 1889, before the sale of the patent to Mr. Fox. It was used for smelting purposes in Moravia. Witness did not think that any work was done at the Stafford works. The syndicate bought works at Huddleston, near Glasgow. Those works were for the manufacture of water gas plant, and work was done there.—The hearing was adjourned.

On his lordship taking his seat on Wednesday morning, Mr. Cock said a settlement was arrived at that morning and judgment entered for the defendants, plaintiffs withdrawing all charges of fraud. It was also arranged that there should be no claim for costs, except in the case of Messrs. Hyde, who were allowed costs.

(Before Mr. Justice Wills and Mr. Justice Wright.)

DEAKIN v. SALT UNION, LIMITED.

Judgment in this case was delivered on Wednesday. It will be remembered this case came before the Court of Appeal from the decision of the referee awarding the plaintiff nominal damages only. Mr. Justice Wills said plaintiff's complaint was that there had been a breach by the defendants of an agreement of November, 1888, to supply salt at prices not exceeding those charged by the defendants to other people with whom the defendants were dealing. Defendants sold salt to the plaintiff for several years at various prices. On the 9th February, 1889, the defendants bought the Runcorn Soap and Alkali Company, Limited, and supplied, by agreement, salt during the period covered by the claim at a lower price than that supplied to the plaintiff. It had been decided in the courts that in supplying this salt to the Runcorn Company they committed a breach of the agreement to the plaintiff, but the plaintiff's claim for £50,000. could not be maintained. The money was not paid simply under a mistake of the Act, but by virtue of a contract made under a mistake by both the contract parties. The action in question was for damages. The referee was right in saying that damages incurred up to the 9th of February were only nominal. There had been a breach of the agreement with the plaintiff by supplying salt to the Runcorn Company at a lower price than that charged to him, and on that head his lordship decided that the plaintiff was entitled to substantial damages. The case would, therefore, have to go back to the referee to assess the damages, and plaintiff must have costs of the motion. Mr. Justice Wright, in effect, concurred, but differed as to the principle on which the damages were to be assessed. Mr. Justice Wills said that the difference would not prevent the matter going back.

GOLD PRODUCTION IN THE RAND.—As was to be expected, the Rand output of gold in January compared badly with the returns of previous months, the total of 148,178 oz. being the smallest since January, 1894, when 149,814 oz. were produced. Compared with December, there is a decrease of 30,250 oz., and with January, 1895, a deficiency of 29,285 oz.

PERSONAL.—We are informed that a movement is on foot to erect a statue of Sir William T. Lewis whose services to Wales have been many. The impress of his work is to be seen over a wide area. Docks, mines, steel works, yielding comfort to hundreds of thousands, are his memorials. The seaman, the miner, the steel worker, have been unceasingly benefited by him, and his services have not ended there. He has been assiduous in looking after the wounded in the battle of Trade and Commerce; in establishing a fund for the injured; and in Mining Schools and Colleges; and not least, in Hospital work his generous sympathies have been exhibited. Particulars of the movement can be had from the Hon. Sec., W. J. Jones, 62, Thomas St., Merthyr Tydfil. Thos. Tyrer, Esq. (President of the Society of Chemical Industry), has for the second time been elected to the chairmanship of the Chemical Section of the London Chamber of Commerce.

THE NATIVE GUANO COMPANY, LIMITED.—Exception has been taken by Mr. W. B. Kemstead, on behalf of the Sewage Transmutation Company, to certain remarks made by the chairman of the N.G. Co. He says:—In the course of his remarks the chairman makes three statements which are not correct, and which I wish to contradict. The statements referred to are:—(1) "We are a company for the manufacture of a manure out of sewage, and we are the only existing company, and the only company which has ever existed, that has been able to make a marketable manure." (2) "There is no process that anyone dares to attempt to carry on in the midst of a town except ours." (3) "Our only rival is lime." The Sewage Transmutation Company, which has been in existence since October, 1893, and has been in active operation since that time, makes a marketable manure out of sewage, without the use of lime, and carries on its operations in the middle of a town; and so the statements referred to are quite incorrect and altogether unjustifiable.



## Reports of Companies.

### THE SALT UNION, LTD.

AT the seventh general meeting of this company, held last week at Winchester House, E.C., the Chairman (Hon. L. Ashley), in moving the adoption of the report and accounts (which appeared in the *Journal* last week), said the difficulties they had had to contend with were the low prices for salt in India and the feebleness of the chemical trade. Of the salt ports in this country Liverpool was the only one showing an increase in 1895 compared with 1894. The directors thought that that increase for Liverpool was very satisfactory, because it compared favourably with the general decrease in shipping tonnage at Liverpool. The increase in the salt shipments at Liverpool had been 2.29 per cent.; while the decrease in shipping tonnage at Liverpool in 1895 compared with 1894 had been 3.1 per cent. In the Middlesbrough district, though there had been a great decrease in salt exports in 1895 compared with 1894, it was satisfactory to report that the shipments of salt made by the Union had increased. The trade with the United States, though much less in quantity than ten or twelve years ago, showed some improvement. The exports to Northern Europe, in spite of severe competition with German manufacturers, had been increased owing to the special attention which they had paid to this branch. It was their hope that this increased business, due, they thought, to the superior quality of their products, would be maintained. In Belgium they had also had a satisfactory increase during the year, but to British North America a somewhat smaller quantity had been sent. They hoped their business to South America would increase, as during the past few months they had made tentative arrangements for the promotion of the Union's interests in that region with a gentleman who was a representative of several well-known commercial interests. To Africa there was unfortunately a decrease in tonnage. Africa should naturally offer an expanding market, but the fiscal regulations in many parts of that continent prevented the expansion which might be looked for. To Australia, also, shipments showed a considerable decrease, but this was only considered to be temporary, and to be due to special influences. The freight market to the Continent had been disturbed from various causes, and it had been difficult to get ships to Australia that would carry so low-priced an article as salt. In this trade they had noticed that good years often succeeded bad years, and they hoped that this would prove the rule in this case. In the Indian trade the Union had still been feeling the effects of the great coal strike, which paralysed trade generally, and the salt trade in particular, and resulted in diminished shipments. It had led to a great increase in the price of salt in Calcutta in 1893, so that in 1893 and 1894 a larger quantity was shipped from England and all other salt producing countries. The result was that the market became overstocked, and in 1895 the prices were so low that shippers abstained from sending the usual quantity to Calcutta, but it was hoped that the diminution of stocks would cause an increased shipment of salt this year, and the ordinary laws of supply and demand would again bring about a fair and remunerative price. The Calcutta market had been further disorganised, both as regarded prices and quantity, by the new conditions introduced by the displacement of sailing ships by steamers. In view of pushing their trade in the far East, they had last year sent out a special commissioner with very high introductions to China and Japan, taking British Columbia *en route*. Various interesting communications had been received from this gentleman, and they hoped in the course of a few weeks to have the benefit of his personal advice. The inland trade had been well maintained as regarded sales for domestic purposes, and if the present mild weather continued there would certainly be a good agricultural demand for what was really the very best and cheapest fertiliser. The chief decrease in the home trade had been the supply of salt for manufacturing purposes, and particularly in chemical works. In all chemical works, as they knew, the chief idea was to obtain the greatest possible amount of produce from the least possible consumption of salt. This problem was always occupying the attention of the greatest men of science, and the Union's trade had suffered both from the discoveries of new processes and the increased use of brine in the chemical trade. It had been further aggravated by the policy adopted by the United Alkali Co., Ltd., of entering into strong competition with the Salt Union as dealers in salt. It was found that while the demand for salt for chemical purposes had gone down from 600,000 tons in 1890 to 275,000 in 1895, they also had the United Alkali Co., Ltd., entering into contracts, and taking orders in the open market. He had always been in favour of each Union sticking to its own business strictly, and with this object in view the Salt Union had always been ready to make contracts with the United Alkali Co., Ltd., at moderate rates. He regretted that this view was not that held by the United Alkali Co., Ltd., and it appeared to the directors of the Salt Union that they must simply, in self-defence, utilize all their resources. They could not

sit still while their markets were being taken from them, and be necessary to carry the war into the enemy's camp. worthy of consideration whether they should not utilize the salt for the manufacture of the higher priced chemicals, and would start in the chemical trade with the newest plant would be free from the burden of old and obsolete works, and thus be able to hold their own even in depressed times.

As regarded their law suit with Mr. Deakin, the directors were merely defending the Union's interests. The increase in the price paid for the acquisition of distributors' agencies was due to a number of these falling due during the year, but this item was generally decreasing. They had increased their investments, and had thought prudent to buy their own 4½ debenture stock. A rather large sum under the head of "Accounts to be received from abroad" reflected the establishment of the depot system in India. At present was the only presidency in the whole of India in which English had any foothold, and there had been recently a strong attempt by importers to capture the Bengal markets. Indian dealers had attempted to mix inferior salt with the English salt, and it was if this was allowed to go unchecked English salt would be ousted, and they thought that by establishing depôts, and thus presenting English salt to the consumers' doors, they would maintain their position on the market. In 1885 the Calcutta deliveries of English salt were 279,435 tons, and of other imported salt 78,644 tons. In 1895 English salt was 240,557 tons whilst other salts reached 149,500 tons, so that while the imports of English salt had barely been maintained, the imports of the salt of other countries had doubled in ten years. English salt not having gained in any way from increased production and facilities of transport. He hoped all their outstanding business with the various railway and canal companies would be settled at the conference which was now meeting. As to the future of the export salt trade, being a ballast trade, was dependent on the commercial and financial conditions of other countries in all parts of the world. A forecast was difficult, but without taking too rosy a view, he thought they could look at the future cheerfully. Things were worse this year than last, and since the end of last year both price and exchange had considerably improved, and the freight market in Australia should naturally resume its normal state. They had been utilising to the greatest extent their works nearest to Liverpool, and some of the heavy charges of the Weaver traffic, and the share might be assured that nothing on their part would be wanting in the year '96 better than '95.

The Hon. C. W. Mills seconded the report, and after a number of questions had been asked and answered, the report was adopted. Messrs. H. J. Falk and Walter Robinson were re-elected directors, and Messrs. Cooper Bros. and Co., of London, and Messrs. H. Banner and Son, of Liverpool, were re-appointed auditors.

### WALKERS, PARKER, AND CO., LTD.

The accounts show a profit for the year of £8,144. In their report the directors state that the position of the company has improved. The competition for business has continued most keenly, and the margins of profits have correspondingly suffered, although aggregate tonnage delivered has again increased. The directors do not write off anything for depreciation of plant and machinery, as the same has been fully maintained out of revenue. Desilverising machinery has been discontinued at the Bagillt works by reason of heavy dues and transport charges, which, added to the scarcity of silver lead, render it impossible for the company at present to carry on this department of business there, except at a loss. Arrangements have been made with reference to the Old Shot Wharf, hitherto controlled by the company, and carried on by the name of Lane, Sons, and Co., Ltd., by which a further annual profit will be effected. A further sum of £2,000. has been paid in reduction of the liability *re* E. J. Walker, and charged to profit and loss account, less the proceeds realised by the sale of certain ordinary shares. There remains, therefore, but £1,000. still payable under this head. On the retirement of the members of the old board, at the last meeting, the new directors found themselves confronted with difficulties, which have, happily, been overcome. The company is now absolutely free from litigation and complication of whatever kind, and the directors, while regretting their inability to declare a dividend, are of opinion that the outlook for the current year is very favourable.

### PRICE'S PATENT CANDLE CO., LTD.

The report of the directors of this company for the past year shows that a disruption in January of the working agreement between allied producers of paraffin was followed immediately by a dissolution of the Candle-makers' Association, and a consequent revival of competition for business which had injuriously affected both producers and candle-makers in the two preceding years. The



pany's profit for 1895 amounted to £82,858., as compared with £69,594. in 1894. Adding to the profit of 1895 the £8,842. brought forward from 1894, together £91,701., there remained at the close of the year, and after deducting the dividend of 15s. per share paid in September, a disposable sum of £63,576. The directors recommend that £12,500. be, as usual, written off for depreciation of fixed properties and plans, that £32,812. be applied in paying, on the 14th inst., a dividend of 17s. 6d. per share, making, with the dividend of 15s. per share paid in September last, a dividend of £1. 12s. 6d. per £16. share for 1895, as against £1. 7s. 6d. for 1894, and £1. 5s. for 1893, the adding of £10,000. to the reserve fund, which will thus be raised to £25,000., and the carrying forward to 1896 of £8,264. The time has arrived when increased accommodation has become necessary for meeting the requirements in London of the company's steadily-growing business. The yards where the stocks of materials are stored at Battersea have been encroached upon of late years by the extension of the factory buildings, whilst the paraffin stocks have gradually increased with the growth of business. Under these circumstances additional stock room has become essential, alike for manufacturing requirements and for affording space for removals should an outbreak of fire unhappily occur; and if the growth of the business continues a small auxiliary factory will be needed at no distant date for carrying on work in departments now employed to almost their utmost capacity for production. As no land suitable for these purposes was available on the Surrey side of the Thames, the directors have bought eight acres of vacant land on the Middlesex shore at Fulham, immediately opposite to the Battersea factory; but before this land can be utilised for its destined purpose, it must be embanked to the satisfaction of the Thames Conservators along its river frontage. The total cost of the purchase and embankment, and of contributing towards the expense of making an inland road and sewer now being constructed by local authorities, is estimated at £23,500., which will be paid out of existing capital.

## SOCIETY OF CHEMICAL INDUSTRY.

### SCOTTISH SECTION.

A MEETING of this Section was held in Glasgow, on Tuesday the 3rd inst., in the rooms of the Society, 207, Bath-street, Dr. John Clark presided. The announced subject for the evening was "The Standard of Flash Point for Mineral Oil" by Mr. D. R. Steuart, of the Broxburn Oil Company. The interest centering in this matter is greater than in any for some time before the Section, and the attendance showed an improvement even in spite of the unpropitious weather. Mr. Steuart is amongst the foremost calling for flash point reform, and he had nothing specially new to advance; but the freshness and earnestness of his treatment undoubtedly gave a renewed stimulus to the agitation, which will no doubt be added to on the resumption of the discussion at the next meeting of the Section. The lecturer referred at some length to the exhaustive series of experiments made by him, upon the Abel test, a matter formerly dealt with in papers of his which are already in the records of the Society. The points which he now emphasised were, that even when not over Abel standard of 73 degs. there was danger (with some sorts of oil) of severe lamp explosion, and that at a very few degrees above that the explosion had been found to be very severe; with oil of 73 degs. serious danger begins at 78 degs. in the case of oil spilled by lamps upsetting, while with oil of 100 degs. danger in like case does not begin till there is a temperature of from 110 to 115 degs.; before the introduction of American petroleum into this country when only the native paraffin oil was burned, there was little heard of lamp accidents, whereas reports of these have since become numerous; cheap lamps of glass and of random construction were to be avoided certainly, but the essential was the change of the flash point standard for which they were contending, since oils of 73 to 83 degs. flash point gave off explosive vapours at summer temperatures, and in winter also at ordinary lamp temperature. If a lamp consuming oil of 100 degs. flash were upset it was a thousand to one that the light would become extinguished without doing harm. He would have the flash point fixed so high that practically it would never be touched in the case of lamps kept in passable order, but there was a powerful conspiracy in London to keep things as they now stand at every cost, and it was that influential conspiracy that they had to break down. The flash of oil for popular use should be so high that filling the lamp when burning, carrying about, or extinguishing by blowing or turning down the wick, could be done with perfect safety. If vapours were not evolved there could be no explosion, and vapours could not be evolved at all unless the oil became heated above the flash point. Therefore, the standard should be so high that under ordinary circumstances it would never be reached in the lamp of the people. Subject to this paramount condition the standard should be as low as possible. A discussion followed, and was adjourned to next meeting in April.

## Parliamentary Notes.

### THE FERTILISERS AND FEEDING STUFFS ACT.

In the House of Commons, last week, Mr. Herbert Lewis asked the President of the Board of Agriculture whether it had been brought to his notice that up to a recent date the number of samples analysed under the Fertilisers and Feeding Stuffs Act, 1893, exceeded ten in six counties only; that in each of eight counties only one analysis had been made; and that in ten counties there had been no analysis at all; and whether, in view of the complexity of the Board of Trade regulations prescribing the procedure for the taking of samples, and for other matters under the Act, the regulations would be simplified, with a view to preventing agriculturists from being deprived of the advantages which the Act confers.

Mr. Long replied that during the two years in which the Fertilisers and Feeding Stuffs Act, 1893, had been in operation the number of samples analysed in Great Britain had exceeded 10 in 27 counties, whilst in nine counties only one analysis had been made, and in 29 counties there had been no analysis. He should be glad to receive and consider any suggestions for the simplification of the regulations under which analyses are taken, but it should be remembered that the analysis might become the basis not only of civil but of criminal proceedings, and it was therefore essential that no mistake should be made in regard to the sample, and that it should accurately represent the article supplied.

### THE SETTLEMENT OF TRADE DISPUTES.

A Bill "to make better provision for the settlement of trade disputes," brought in by Mr. Ritchie, Sir Matthew White Ridley, and Mr. Chamberlain, has been published. It provides for the registration of boards of conciliation, and gives power to the Board of Trade, where a dispute exists or is apprehended, to inquire and report on the circumstances, to take steps for enabling the parties to meet under the presidency of a chairman mutually agreed upon or nominated by the Board of Trade or otherwise, to appoint a conciliator or conciliation board on the application of employers or workmen, or to appoint an arbitrator on the application of both parties. The Bill also provides that the Board of Trade shall have power to aid in the establishment of conciliation boards in districts where adequate means of conciliation do not appear to exist.

### TRACTION ENGINE REGULATIONS.

In the House of Commons, on Tuesday, on the motion of Mr. G. Boscawen, a Select Committee was appointed to inquire into the working of the laws relating to the use of traction engines on roads.

### THE PETROLEUM INQUIRY.

On the motion of Sir W. Walrond, a Select Committee was appointed to inquire into and report upon the sufficiency of the law relating to the keeping, selling, using, and conveying of petroleum and other inflammable liquids, and the precautions to be adopted for the prevention of accidents with petroleum lamps.

## Trade Notes.

**NITRATE STATISTICS.**—The Public Statistical Circular of the Permanent Nitrate Committee states:—"Nitrate of soda—Total exports to Europe, February, 1,414,000 quintals; loading for Europe, March 1, 1,823,000 quintals; imports, Europe, February, 121,950 tons; deliveries in Europe, February, 190,280 tons; visible supply, Europe, March 1—stocks and afloat, 540,020 tons."

**THE CYANIDE PROCESS.**—The action brought by Mr. James Hay against the African Gold Recovery Company to decide whether the patent rights of the company in the MacArthur-Forrest gold extraction process, commonly known as the cyanide process, are valid in South Africa, was to come before the court at Pretoria on the 17th inst. Mr. Erselen (ex-State Attorney), who has been retained for the company, is at present studying the process at the works.

**THE MANCHESTER PLATE GLASS COMPANY, LIMITED.**—We learn that the Plate Glass Works, with fixed machinery and plant, and the adjacent properties of the London and Manchester Plate Glass Company, Limited (in liquidation), situate at Sutton, St. Helens, Lancashire, the whole extending to about 200 acres, will be offered for sale by public auction, in one lot, in or about the month of April next. The works are capable of turning out 65,000 square feet of polished plate glass per week, by using in combination part of the old machinery, and the whole of the new and modern machinery recently introduced, or, 45,000 square feet per week, by using the new and modern machinery alone.



**BORAX PRODUCTION IN THE STATES.**—The following table shows the output of borax in pounds, for the last five years.

| Year.     | California. | Nevada.   | Total.     | Value.    |
|-----------|-------------|-----------|------------|-----------|
| 1891..... | 8,533,337   | 3,296,663 | 11,830,000 | \$887,250 |
| 1892..... | 11,050,495  | 1,487,701 | 12,538,196 | 940,365   |
| 1893..... | 7,999,562   | 1,199,438 | 9,199,000  | 689,925   |
| 1894..... | 11,540,999  | 1,600,498 | 13,140,594 | 919,842   |
| 1895..... | 11,869,173  | 1,587,215 | 13,456,388 | 739,386   |

**CUBAN SUGAR INDUSTRY.**—The Cuban Sugar Industry is reported as being completely demoralised. There are only sixteen of 366 estates in Cuba now grinding cane. The outlook is gloomy in the extreme. The sugar output of Cuba this year to February 27th is under 26,000 tons, as against 276,000 tons for the same period last year. The total crop this season will probably amount to 150,000 tons, as against 1,070,000 tons last year. America, which consumes nearly all the Cuban sugar, will thus look to Europe to supply the deficiency of, roughly, 900,000 tons.

## Market Reports.

### TAR AND AMMONIA PRODUCTS.

Benzols are quietly steady at 2s. for 90's and 1s. 8d. for 50/90's. Carbolic acids continue very firm, with crude (60%) at 2s. 3d. Crystals (40%) are in good demand at 8½d. Crude naphtha is slightly easier, the quotation now being 9d. Solvent is unchanged at 1s 6d. Creosote easy and lower. Anthracene unaltered. Pitch quiet at 34s., f.o.b. East Coast.

Sulphate of ammonia is rather firmer, but the demand is somewhat feeble. A small business has been doing at about the figures given below, but buyers are not keen and decline to pay an advance. Beckton is quoted £8. 7s. 6d., London outside makes £8. 10s., Liverpool £8. 8s. 9d. to £8. 10s., Hull £8. 8s. 9d., and Leith £8. 7s. 6d., all prompt. Nitrate of soda steady.

### LIVERPOOL MINERAL MARKET.

The firm tone reported in our market last week has been well maintained; some minerals have advanced, with the probability of a still further upward tendency. Manganese arrivals are very slow, whilst stocks are practically exhausted; prices therefore have advanced. Ground manganese: The demand is brisk at £7., £9., £11., and £13. 10s. per ton, according to quality. Sulphate of manganese: High quality is selling freely at good figures. Manganiferous ore is in good demand at advanced figures. Chrome ore: Arrivals have improved; prices are steady. Bauxite: The demand is good; aluminium metal works have now started, and the consumption is, therefore, greatly increased, and a large trade is expected at high figures; present prices are 20s. for first, 16s. for second, and 16s. for third quality, f.o.b. French chalk: Although arrivals have increased they can scarcely keep pace with the demand, whilst stocks are very low; prices are therefore strong at 70s. to 75s., 80s. to 90s., and 100s. to 110s. per ton for "Angel White" brands, according to grade. Wolfram and scheelite: There is more doing at improved prices; stocks are small. Arsenic continues strong at £20 per ton. Fuller's earth: The demand continues steady at unaltered prices—50s. for lump, 55s. for ground, and 75s. for impalpable powder, "Emerald," and other brands. Rottenstone: Prime qualities are in fair request at full prices—£8. 10s. to £14. per ton, according to grade. Ochres and umbers continue in good demand, especially for good staining qualities, prime J.C. ochre being done at 60s per ton, and umber 40s. to 45s. per ton. Carbonate and sulphate of barytes: The demand is fair, with an upward tendency. Plumbago: The demand continues strong for founders' and lubricating qualities at £6. to £10. per ton; prime Ceylon is steady at £15. to £20. per ton, according to quality. Pumice stone: The demand is good, ground being done at £6. to £7. per ton, and superior Teneriffe lump at £7. 10s. per ton. Bog ore is in fair demand at 22s 6d. to 25s. per ton.

### MISCELLANEOUS CHEMICAL MARKET.

In the alkali trade business continues fairly steady. Caustic soda is in good request. There are no changes to record in value during the past week. Spot quotations, subject to some variations according to market, are as follows:—F.o.b. Liverpool, 77%, £9. 7s. 6d.; 74%, £8. 10s.; 70%, £7. 10s.; 60%, £6. 10s. nett per ton, 10-ton lots and upwards. Ammonia alkali, 58%, unchanged at £3 7s 6d., bags, makers' works. Soda crystals 37s. 6d. nett, bags. Leblanc ash 1d. to 1½d. per degree, casks, f.o.r. makers' works. For bleaching powder prices are £7. per ton, softwoods, f.o.r. m. kers' works, and £7. 5s.

per ton, hardwoods, f.o.b. Liverpool, with fairly good inquiry Chlorate of potash—makers' price 47½d., resellers at 43½d. Chlorate of soda 6½d. to 6½d. per lb. Sulphate of copper has sharp rise to £19. 10s., f.o.b. Liverpool, and this price has been for early delivery. White powdered arsenic, under the extreme has now risen to £21., Liverpool, Garston, etc. Brown acetate has given way a further point during the week under pressure of Other acetates quiet and unchanged in value. Nitrate of soda and is finding ready outlet at 8s. 1½d. to 8s. 3d. per cwt. prussiate of potash quiet at 7½d per lb. Cyanides unaltered. caustic and carbonate, are in good inquiry, and prices: Ammonia and salts slightly easier all round. Green copperas request, and supplies considerably curtailed. For carbolic acid there is still good demand, and prices are firm; liquid carbolic are quoted slightly higher. Aniline oil and salt are lower. There is a general slackness in demand for all chemicals used in textile trades.

### REPORT ON MANURE MATERIAL.

On the whole business has been very quiet, but prices have fairly well maintained. It is reported that further business done in high grade Florida rock for the North Sea at recent but buyers for the United Kingdom are still holding off. Qu for South Carolina and Algerian phosphates are unchanged. River rock is now quoted 5½d. per unit, and business is being the price. There is nothing doing in River Plate bones. value of cargoes afloat is £3. 15s. Sales of crushed East India have been made for shipment at £3. 16s. 3d. per ton, ex qu pool, but for parcels in store £4. per ton is required. For £3. 16s. 3d. is asked for Bombay bone meal. On spot the £3. 16s. 3d. to £4., according to quality. Nitrate of soda is all positions, but during the week business in this article rather quieter. The value on spot is 8s. for ordinary quality 8s. 1½d. for fine. Due cargoes are worth about 7s. 10½d., quality. Home-prepared dried blood still continues to offer a f.o.r. at works.

### THE METAL MARKETS.

**LONDON, WEDNESDAY.**—Pig iron, dull: Scotch closed at 47s. 8d.; Middlesbrough, 38s. 7d. cash, and 49s. 3d. Copper, quiet: Chili bars, G. O. B.'s and G. closed at £45. 15s. to £46. cash, and £46. 2s. 6d. to £46. three months. Tin, steady: Straits closed at £60. 12s. 6d. 2s 6d. cash, and £61. 5s. to £61. 15s. three months. A £61. 5s. English ingots, £64. 10s. to £65. Lead, firm: £11. 6s. 3d.; English, £11. 10s. to £11. 12s. 6d.; spelter, ordinary, £14. 17s. 6d. to £15. Nickel, 1s. 2½d. A £29. 15s. Quicksilver: first hands, £7. 2s. 6d.; second £7. 2s. Copper shares, steady: Cape, 2½ to 2½; Copiapu, 2½ Libiola, 3 to 3¼; Mason and Barry, 2½ to 3½; Rio Tinto 18¼; Tharsis, 5 to 5¼.

**GLASGOW, WEDNESDAY.**—Market steady, with small Scotch done at 47s 7½d. and 47s. 8d. cash, also at 47s month; closing with buyers at 47s. 8d. cash, sellers ask 47s. Cleveland done at 38s. 9d. 13 days; closing with buyers at cash, sellers ask 38s. 8d. Cumberland hematite done at 4 and 49s. 4d. cash; closing with buyers at 49s. 3d. cash, sellers ask 49s. 4d. Middlesbrough hematite closes with buyers at 46s. 6d. sellers ask 46s. 7½d.

### LIVERPOOL OIL AND COLOUR MARKET.

WEDNESDAY.

**OILS.**—Palm oil is easy but steady, with a rather better doing. Lagos has been selling at £19. 10s., transit. Olive firm, and prices steady. There is a fairly good spot inquiry. is quoted £30. to £30. 10s., and Seville £29. 10s. to £30. Linseed is rather easier, Liverpool makes in export casks being 20s. 3d. to 21s. per cwt. Cottonseed is quiet, without change in Liverpool refined standing at 17s. 3d. to 17s. 6d. per cwt. is very steady, without alteration in last week's quotations. a moderate business passing. Tallow is inclined to be easier, is not much doing, as at present prices remain stationary. R continues to rule firm at 4s. 10½d. to 5s. for common, 5s. 3d. for medium, and 7s. to 8s. for fine. In consequence, there is but limited business doing. Spirits of turpentine are easier, but a better demand at the reduced price of 21s. 3d. per cwt. Petroleum is quietly steady at 6½d. to 7½d. for American, a per gallon for Russian refined.



S are steady, without alteration in prices. Lordshire, common, £10., medium, £12., best, £15. common, 40s.; medium, 50s., best, 60s.; Welsh, best, 50s., and common, 18s.; Irish, Devonshire, 40s. to J.C., 60s. to 65s.; M.C., 65s. to 67s. 6d. Umber: Devonshire, 50s. to 55s. White lead, £16. Red lead Venetian red, £6. to £10. Cobalt: Prepared oxide, 6s.; blue, 6s. Zaffres: No. 1, 3s. 6d.; No. 2, 1s. 6d. of iron: Common, £7.; medium, £10.; finest, £20. 22. 10s. to £25.

## TYNE CHEMICAL REPORT.

TUESDAY.

Chemicals is perhaps a shade better, but prices remain sulphur scarce at £3. 17s. 6d. per ton. Soda crystals, per ton, gross weight, locally. Bleaching powder, £7. 10s. Caustic, 76/77%, £9. 5s. per ton; 70%, £7. 10s. per ton.

powder, softs, £7. 5s. per ton, nett; hards, £7. 10s. per ton, soda, 76/77%, £9. 5s. per ton, nett; do., 70%, £7. 15s. recovered sulphur, 2 cwt. bags, £3. 17s. 6d. per ton, nett; do., £3. 15s. per ton, nett; do., 52%, £3. 17s. 6d. per ton, 56%, £4. per ton, nett; alkali, 36%, £2. 15s.; white alkali, 48%, £4. 10s. per ton, nett; do., 50% ton, nett; do., 52%, £5. per ton, nett; hyposulphite of soda, 5-cwt. casks, £6. 5s. per ton, nett; do., 1 cwt. kegs, £7. silicate of soda, 75° Tw., £2. 12s. 6d. per ton, nett; w., £3. per ton, nett; do., 140° Tw., £3. 7s. 6d. nett; soda crystals, casks, £2. 2s. 6d. per ton, do., 2 cwt. bags, £2. 2s. 6d. per ton, nett weight; potash, 5d. per lb., less 6%; pearl hardening, nett; pure white sulphate of alumina, £3. 17s. 6d.; blanc fixe, £7. 5s. per ton, nett; chloride of barium, £6. 15s., per ton, nett; do., 90 95% crude calcined, nett; sulphide of barium, crystals, £4. 15s. per ton, nett; alumina, £30. per ton, nett; aluminate of soda, £30.

South Durham salt is steady at 9s. per ton, f.o.b. Tees.

The general condition of trade is very slightly altered, of the collieries are working a little better. Prices to-day Northumbrian steam, 8s. to 8s. 6d. per ton; second to 7s. 6d. per ton; small steam, 3s. 9d. to 4s. per ton; unscreened, 6s. 3d. to 6s. 9d. per ton; gas coals, 7s. to 8s.; household coals, 10s. to 10s. 6d. per ton; coke, firm, 5s. per ton.

## PAINT, OIL, AND COLOUR REPORT.

TUESDAY.

Prices are little changed, with little of an extraordinary wing. The imports of seed have been well maintained, tendency to keep down values. Amongst the principal Hull up to date, compared with the same time a year ago, ed, 85,521 quarters, against 38,550 quarters; rapeseed, 28,588 quarters; coltseed, 49,919 tons, 22 tons; olive oil, 4,727 casks, against 1,767 casks; rape s, against 2,318 casks; oilcakes, 4,160 tons, against 2,475 t, 6,645 cwt., against 2,255 cwt.; turpentine, 6,167 at 2,980 barrels; bones, 1,593 tons, against 1,325 tons. remains very quiet. Spot offers at 18s. 7½d. naked, and llers at same price for March-April and May-August; last 18s. 6d.; boiled and refined ditto, £1. to £2. per ton ort for the week, 1,880 cwt. Refined cotton oil also 15s. 1½d. to 15s. 3d. naked; March-April offers at and May-August at 16s. Crude, 13s. 9d. naked, h-April quoted 14s.; casks £1. and ordinary barrels ton extra. Export of refined for the week, 9,740 cwt. tive oil, £13. per ton. Castor oil from 2½d. per lb. m £29. per tun. Cod oil scarce and in improving value. d soap, £14. per ton. Sperm oil from £23. Locomotive

Linseed cakes firm: 95% pure, £6. 2s. 6d. to £6. 5s.; 17s. 6d. to £6. 2s. 6d. Oil cakes, £5. 2s. 6d. Cotton: Best makes, £3. 12s. 6d. to £3. 15s.; seconds, £3. 10s. Black Sea, £2. 7s. 6d.; East India, £3. 7s. 6d. per ton. —These articles in good request, and makers busy. —White lead, £16. 10s.; red lead, £14. 10s.; black, n red, oxide of iron, yellow ochre, and green paints from n; linseed oil putty, in bladders for export, 8s. 6d. per emover, £1. 5s. to £1. 10s. per cwt.; ready-mixed paints, ever tins, from £24. per ton; imperial black varnish, ton, in barrels; oak varnish from 5s. 6d. per gallon.

## WEST OF SCOTLAND CHEMICALS.

GLASGOW, TUESDAY.

The feeling in this market as regards sulphate of ammonia is this week at a still lower ebb, and prompt value for the moment cannot be stated at higher than £8. 7s. 6d., f.o.b. Leith. This is the second time it has been down to this very low mark, but the feeling now is certainly more depressed than it was on the earlier occasion. Continental views expressed to correspondents here are even less favourable than they were, and the forecast of the dealers is far from encouraging. Amongst the mineral oils and paraffins a fairly good tone is maintained, with no price changes, although the tendency in lubricants is certainly towards a further advance, the call for the article being very good and increasing to all appearance. General chemicals are without any additional change except in one or two lines only, and the feeling is somewhat indifferent. Nevertheless, a definite revival of some kind is generally expected within a brief space from now.

Chief prices current are:—Soda crystals, £2. 2s. 6d., nett, Tyne; soda ash, 48/56°, £3. 15s. to £4. 15s. nett, Tyne; white alkali, 48/52°, £4. 10s. to £5. nett, Tyne; alum in lump, £5. 5s. nett, Glasgow; caustic soda, white, 74° £8. 10s., 70/72° £7. 10s., 60/62° £6. 10s., and cream 60/62° £6. 7s. 6d., all nett, Liverpool; bleaching powder, £6. 5s. to £7. 5s. nett, Tyne; saltcake, 27s. 6d.; borax, English, refined, £20., and boracic acid, £30. nett, Glasgow; bicarbonate of soda, 5-cwt. casks, £6. 10s., and 1-cwt. casks £6. 15s. nett, Liverpool; bichromate of potash, 4½d. nett, for Scotch and English deliveries (for export, 4½d. nett, f.o.b. Glasgow); bichromate of soda, 3¾d. nett, for Scotch and English deliveries (for export, 3½d. nett, f.o.b. Glasgow); chlorate of potash, 4½d. less 5%, Liverpool; nitrate of soda, 8s. to 8s. 3d.; sulphate of ammonia, £8. 7s. 6d. prompt, f.o.b. Leith; salammniac, first and second white, £39. and £37. nett, any port; sulphate of copper, £17. 7s. 6d., less 5%, Liverpool; paraffin scale, hard, 1½d., and soft, 1¾d. to 1½d. per lb.; paraffin wax, 120° semi-refined, 2¾d. to 2½d.; paraffin spirit (naphtha), 7½d. per gallon; paraffin oil (burning) No. 1, 6½d., and crystal, 6¾d., at works, for Scotch buyers (English sales about ½d. lower); ditto (lubricating) 865° £5., 885° £5. 10s. to £6., and 890/895° £6. to £6. 10s. Week's imports of sugar at Greenock were 5,597 baskets cane unrefined and 7,582 bags beet unrefined.

## New Companies.

**Crystal Manufacturing Co., Ltd.**—CAPITAL, £35,000., in £1. shares. This company has been formed to carry on the business of chemists and drysalts, &c. The subscribers to the memorandum of association are:—W. E. Pearse, 145, Cannon-street, E.C., C.A.; S. Platts, 145, Cannon-street, E.C., clerk; A. Martin, Sidcup, Kent, accountant; J. Perry, 175, Essex-road, Islington, clerk; H. J. Church, 70, Ashburnham-road, Greenwich, clerk; H. Adams, 111, Mayall-road, Herne Hill, clerk; A. Puleston, 13, Sherborne-lane, E.C., solicitor.

**Champion Incandescent Gas Lamp Co., Ltd.**—CAPITAL, £15,000., in £5. shares. This company has been formed to manufacture and deal in incandescent mantles and gas and oil burners. The subscribers to the memorandum of association are:—W. North, Shiblyray-buildings, Willesden Green; A. D. Bull, 212, Albion-road, Stoke Newington, clerk; H. Putz, 8, Grove-road, Willesden Green, merchant; C. A. Gibson, 74, Hadley-street, W., engineer; W. G. Potter, 24, Estcourt-road, Fulham, engineer; E. F. Putz, 8, Grove-road, Willesden Green, clerk; C. Harrison, 136, Kentish Town-road, N.W., ironmonger.

**Henry Tate and Sons, Ltd.**—CAPITAL, £750,000., in £100. shares. This company has been formed to acquire and carry on the sugar refining business of Messrs. H. Tate and Sons, Liverpool. The subscribers to the memorandum of association are:—H. Tate, J.P., Park Hill, Streatham Common, S.W.; W. H. Tate, Highfield, Wootton, Liverpool, sugar refiner; E. Tate, J.P., 1, Collingham Gardens, South Kensington; H. Tate, jun., Allerton Beeches, Allerton, Liverpool, sugar refiner; G. B. Tate, Thames Ditton House, Thames Ditton, manager; E. W. Oakfield, Aigburth, Liverpool, manager; H. J. Robinson, Upton, Cheshire, manager.

**Smith, Powers, Simpson, Greenens and Co., United, Ltd.**—CAPITAL, £100,000., in £10. shares. This company has been formed to carry on the businesses of paint, varnish, and chemical manufacturers, now carried on at Coventry, Ghent, and Homburg, by H. Smith, Simpson, and Greenens, and Dr. Münzer respectively. The subscribers to the memorandum of association are:—W. A. College, Station-road, Foleshill, Coventry, clerk; J. J. Willdigg, Foleshill-road, Coventry, clerk; J. Bonstead, 77, Ashville-terrace, Coventry, clerk; E. J. Woodhead, 13, Jordan Well, Coventry, clerk; J. Davies, 41, Hood-street, Coventry, clerk; W. H. Moore, 9, Richmond-terrace, Coventry, clerk; J. Ashley, 13, Bishop-street, Coventry, auctioneer.







**LIVERPOOL.**

Week ending February 20th.

|                                        |                |                            |
|----------------------------------------|----------------|----------------------------|
| <b>Alum</b> —                          |                |                            |
| Paris,                                 | 1 ck.          | Dominion Line              |
| <b>Barytes</b> —                       |                |                            |
| Antwerp,                               | 20 bgs.        |                            |
| <b>Bone Meal</b> —                     |                |                            |
| Fray Bentos,                           | 1,826 bgs.     |                            |
| Bombay,                                | 5,000          |                            |
| Calcutta,                              | 4,480          |                            |
| <b>Carbonic Acid</b> —                 |                |                            |
| Paris,                                 | 4 cs.          | T. Edwards                 |
| <b>Castor Oil</b> —                    |                |                            |
| Marseilles,                            | 25 cs.         | Langstaff & Co.            |
| Calcutta,                              | 250            | 135 brls.                  |
| <b>Chemicals (otherwise unascrbed)</b> |                |                            |
| Rotterdam,                             | 1 cs.          |                            |
| Hamburg,                               | 10 cks.        |                            |
| <b>Cod Oil</b> —                       |                |                            |
| Hamburg,                               | 2 cks.         |                            |
| <b>Colours</b> —                       |                |                            |
| Bremen,                                | 4 cks.         | 80 pks.                    |
| Rotterdam,                             | 10             |                            |
| Bordeaux,                              | 1 cs.          |                            |
| <b>Cream of Tartar</b> —               |                |                            |
| Barcelona,                             | 5 cks.         |                            |
| <b>Dried Blood</b> —                   |                |                            |
| Fray Bentos,                           | 350 bgs.       |                            |
| <b>Dyestuffs</b> —                     |                |                            |
| <b>Extracts</b>                        |                |                            |
| New York,                              | 1 ck.          | 248 pks. Emile M. Schweith |
| Philadelphia,                          | 200 bxs.       |                            |
| Ghent,                                 | 30             | J. T. Fletcher & Co.       |
| <b>Indigo</b>                          |                |                            |
| Bombay,                                | 2 cs.          |                            |
| <b>Logwood</b>                         |                |                            |
| Laguna, Mexico,                        | 9,659 quintals |                            |
| <b>Orchella</b>                        |                |                            |
| Lisbon,                                | 30 bgs.        | Edwards Bros.              |
| <b>Turmeric</b>                        |                |                            |
| Calcutta,                              | 500 bgs.       |                            |
| <b>Farina</b> —                        |                |                            |
| Fiume,                                 | 200 bls.       | A. Baumann & Co.           |
| <b>Glucose</b> —                       |                |                            |
| New York,                              | 110 brls.      |                            |
| "                                      | 300            | T. M. Duche & Sons         |
| <b>Glue</b> —                          |                |                            |
| Fiume,                                 | 89 brls.       |                            |
| Trieste,                               | 50 bgs.        | Ullmann & Muller           |
| Gothenburg,                            | 4              | 20                         |
| Hamburg,                               |                |                            |
| Marseilles,                            | 225 pks.       |                            |
| <b>Guanine</b> —                       |                |                            |
| Fray Bentos,                           | 4,410 bgs.     |                            |
| <b>Limestone</b> —                     |                |                            |
| Antwerp,                               | 1 crt.         |                            |
| <b>Manganese Ore</b> —                 |                |                            |
| Stratoni,                              | 2,183 t.       |                            |
| <b>Manure</b> —                        |                |                            |
| Philadelphia,                          | 207 bgs.       |                            |
| <b>Mineral White</b> —                 |                |                            |
| Fiume,                                 | 100 bgs.       |                            |
| <b>Ochre</b> —                         |                |                            |
| Rouen,                                 | 10 cks.        |                            |
| <b>Palst</b> —                         |                |                            |
| Amsterdam,                             | 3 brls.        |                            |
| <b>Paraffin Scale</b> —                |                |                            |
| New York,                              | 64 brls.       | Thompson & Bedford         |
| Philadelphia,                          | 179            |                            |
| <b>Phosphate</b> —                     |                |                            |
| Ostend,                                | 1,000 bgs.     |                            |
| <b>Pitch</b> —                         |                |                            |
| Amsterdam,                             | 5 cks.         |                            |
| <b>Plumbago</b> —                      |                |                            |
| Genoa,                                 | 80 bgs.        | G. Huntriss & Co.          |
| Hamburg,                               | 67 cks.        |                            |
| <b>Potash</b> —                        |                |                            |
| Antwerp,                               | 17 dms.        |                            |
| Dunkirk,                               | 20 cks.        |                            |
| <b>Potassium Chlorate</b> —            |                |                            |
| Gothenburg,                            | 20 kgs.        | Paterson & Co.             |
| "                                      | 42             |                            |
| <b>Pyrites</b> —                       |                |                            |
| Huelva,                                | 4,014 t.       | Matheson & Co.             |
| <b>Rosin</b> —                         |                |                            |
| Boston,                                | 1,306 brls.    |                            |
| <b>Saltpetre</b> —                     |                |                            |
| Hamburg,                               | 112 brls.      |                            |
| Calcutta,                              | 671 bgs.       |                            |

|                        |           |                             |
|------------------------|-----------|-----------------------------|
| <b>Soap</b> —          |           |                             |
| New York,              | 660 pks.  |                             |
| Rotterdam,             | 3 cs.     |                             |
| Boston,                | 8         |                             |
| New York,              | 2         | Burroughs, Wellcome         |
| Marseilles,            | 11        |                             |
| Newport News,          | 170 brls. |                             |
| <b>Soapstone</b> —     |           |                             |
| Bordeaux,              | 200 bgs.  | G. G. Blackwell, Sons & Co. |
| <b>Soda</b> —          |           |                             |
| Rotterdam,             | 40 brls.  |                             |
| <b>Starch</b> —        |           |                             |
| Trieste,               | 200 bgs.  | N. W. Jackson               |
| Baltimore,             | 200 tks.  |                             |
| Antwerp,               | 160 cs.   | J. T. Fletcher & Co.        |
| "                      | 320       |                             |
| Rotterdam,             | 120       | 5 brls.                     |
| Boston,                | 10 bds.   | M. T. Connors               |
| New York,              | 67 bgs.   | T. M. Duche & Sons          |
| "                      | 214       | J. Laing, Son & Co.         |
| "                      | 100       |                             |
| <b>Stearine</b> —      |           |                             |
| Antwerp,               | 39 bgs.   |                             |
| Rotterdam,             | 18 cs.    |                             |
| New York,              | 51 hds.   |                             |
| <b>Tallow</b> —        |           |                             |
| B. Ayres,              | 540 pps.  | London & Brazilian Bank     |
| "                      | 500       | 100 hf. pps.                |
| Fray Bentos,           | 286 tcs.  |                             |
| Rotterdam,             | 162 cks.  |                             |
| Portland,              |           | 1 bx.                       |
| New York,              | 47        |                             |
| <b>Tartar</b> —        |           |                             |
| Bordeaux,              | 10 cks.   |                             |
| <b>Tartaric Acid</b> — |           |                             |
| Rotterdam,             | 10 cks.   |                             |
| Bordeaux,              |           | 8 cs.                       |
| Marseilles,            | 32        |                             |
| <b>White Lead</b> —    |           |                             |
| Antwerp,               | 22 cks.   |                             |
| Dunkirk,               | 54 brls.  |                             |
| <b>Wood Pulp</b> —     |           |                             |
| Gothenburg,            | 6 pks.    | G. Schenkenwald             |
| "                      | 227 bls.  | M. Relp & Co.               |
| Boston,                | 567 bds.  | Spicer Bros., Ltd.          |
| Rotterdam,             | 123       |                             |
| New York,              | 1 cs.     | Pickard & Deane             |
| <b>Zinc Oxide</b> —    |           |                             |
| Antwerp,               | 36 brls.  |                             |
| <b>Zinc White</b> —    |           |                             |
| Rotterdam,             | 60 cks.   |                             |

**MANCHESTER.**

Week ending February 22nd.

|                                        |          |                      |
|----------------------------------------|----------|----------------------|
| <b>Alizarine</b> —                     |          |                      |
| Rotterdam,                             | 2 cs.    |                      |
| <b>Aniline Colours</b> —               |          |                      |
| Rotterdam,                             | 19 cks.  | 14 cs.               |
| <b>Antimony Salt</b> —                 |          |                      |
| Rotterdam,                             | 1 ck.    |                      |
| <b>Barytes</b> —                       |          |                      |
| Antwerp,                               | 200 bgs. |                      |
| Rotterdam,                             | 25 cks.  | 50                   |
| <b>Chemicals (otherwise unascrbed)</b> |          |                      |
| Rotterdam,                             | 8 cks.   |                      |
| <b>Colours</b> —                       |          |                      |
| Paris,                                 | 2 cks.   | 1 bx.                |
| Hamburg,                               | 1        | 3 cs.                |
| Antwerp,                               | 12       |                      |
| Rotterdam,                             | 29       | 25 51 brls.          |
| <b>Creosote Salts</b> —                |          |                      |
| Hamburg,                               | 2 cks.   |                      |
| <b>Cutch</b> —                         |          |                      |
| Paris,                                 | 10 cs.   |                      |
| <b>Dextrine</b> —                      |          |                      |
| Hamburg,                               | 50 bgs.  |                      |
| <b>Extracts</b> —                      |          |                      |
| Treport,                               | 30 cks.  |                      |
| Antwerp,                               | 4 brls.  |                      |
| <b>Farina</b> —                        |          |                      |
| Stettin,                               | 100 bgs. | Brown, Geveke, & Co. |
| "                                      | 1,420    |                      |
| Hamburg,                               | 30       |                      |
| <b>Glue</b> —                          |          |                      |
| Treport,                               | 10 cks.  |                      |
| Hamburg,                               | 20 bgs.  |                      |
| Rotterdam,                             | 20       |                      |

|                                 |            |                      |
|---------------------------------|------------|----------------------|
| <b>Lead Acetate</b> —           |            |                      |
| Hamburg,                        | 13 cks.    |                      |
| <b>Limestone</b> —              |            |                      |
| Antwerp,                        | 1 cs.      |                      |
| <b>Litharge</b> —               |            |                      |
| Rotterdam,                      | 18 cks.    |                      |
| <b>Lithopone</b> —              |            |                      |
| Stettin,                        | 21 cks.    |                      |
| <b>Potassium Permanganate</b> — |            |                      |
| Hamburg,                        | 1 ck.      |                      |
| <b>Potassium Sulphate</b> —     |            |                      |
| Antwerp,                        | 200 bgs.   |                      |
| <b>Salt</b> —                   |            |                      |
| Antwerp,                        | 8 cs.      |                      |
| <b>Sodium Naphthol</b> —        |            |                      |
| Rotterdam,                      | 1 cs.      |                      |
| <b>Starch</b> —                 |            |                      |
| Rotterdam,                      | 60 cs.     |                      |
| Hamburg,                        | 108        |                      |
| Antwerp,                        | 10         | J. T. Fletcher & Co. |
| "                               | 92         |                      |
| <b>Tannic Acid</b> —            |            |                      |
| Hamburg,                        | 4 cks.     |                      |
| <b>Tartaric Acid</b> —          |            |                      |
| Rotterdam,                      | 91 cks.    |                      |
| <b>Ultramarine</b> —            |            |                      |
| Rotterdam,                      | 4 cks.     |                      |
| Hamburg,                        | 9          |                      |
| <b>Waste Salt</b> —             |            |                      |
| Hamburg,                        | 500 bgs.   |                      |
| <b>Wood Pulp</b> —              |            |                      |
| Gothenburg,                     | 6,165 bls. |                      |
| Fredrikshald,                   | 900        |                      |
| Hamburg,                        | 48         |                      |
| Skein,                          | 2,061      |                      |
| Christiania,                    | 2,000      |                      |
| Drammen,                        | 8,096      |                      |
| <b>Zinc Oxide</b> —             |            |                      |
| Rotterdam,                      | 80 brls.   |                      |
| <b>Zinc White</b> —             |            |                      |
| Rotterdam,                      | 10 cks.    |                      |

**HULL.**

Week ending February 22nd.

|                                        |            |                             |
|----------------------------------------|------------|-----------------------------|
| <b>Acetic Acid</b> —                   |            |                             |
| Rotterdam,                             | 5 blns.    | Hutchinson & Son            |
| <b>Barytes</b> —                       |            |                             |
| Antwerp,                               | 33 cks.    | Bailey & Leatham            |
| Rotterdam,                             | 95         | Hutchinson & Son            |
| <b>Bone Meal</b> —                     |            |                             |
| Kurrachee,                             | 3,000 bgs. |                             |
| Bombay,                                | 2,000      |                             |
| <b>Castor Oil</b> —                    |            |                             |
| Genoa,                                 | 89 cs.     | Wilson, Sons, & Co., Ltd.   |
| <b>Chemicals (otherwise unascrbed)</b> |            |                             |
| Bremen,                                | 5 blns.    | Veltmann & Co.              |
| Stettin,                               | 3 cks.     | Wilson, Sons, & Co., Ltd.   |
| Dunkirk,                               | 17         | "                           |
| Antwerp,                               | 21 dms.    | "                           |
| <b>Cod Oil</b> —                       |            |                             |
| Aalesund,                              | 68 brls.   | Wilson, Sons, & Co., Ltd.   |
| Bergen,                                | 21         | "                           |
| <b>Colours</b> —                       |            |                             |
| Antwerp,                               | 1 ck.      | Bailey & Leatham            |
| Rotterdam,                             | 1 bx.      | 6 2 cs. 77 pks.             |
| Genoa,                                 | 13 brls.   | W. & C. L. Ringrose         |
| Amsterdam,                             | 71 dms.    |                             |
| Rotterdam,                             | 4 cks.     | 1 cs. Hutchinson & Son      |
| "                                      | 26         | 2 Wilson, Sons, & Co., Ltd. |
| Antwerp,                               | 19 pks.    | "                           |
| <b>Cryolite</b> —                      |            |                             |
| Copenhagen,                            | 4 cks.     | Wilson, Sons, & Co., Ltd.   |
| <b>Dextrine</b> —                      |            |                             |
| Stettin,                               | 195 bgs.   | Wilson, Sons, & Co., Ltd.   |
| <b>Dyestuffs</b> —                     |            |                             |
| <b>Alizarine</b>                       |            |                             |
| Rotterdam,                             | 11 cks.    | 86 pks. W. & C. L. Ringrose |
| "                                      | 92 brls.   |                             |
| <b>Myrabolams</b>                      |            |                             |
| Bombay,                                | 9,538 bgs. |                             |
| <b>Farina</b> —                        |            |                             |
| Hamburg,                               | 100 bgs.   |                             |
| Harlingen,                             | 450        | W. & C. L. Ringrose         |
| Stettin,                               | 70         | Wilson, Sons, & Co., Ltd.   |
| Ghent,                                 | 20         | 222 cs. "                   |

|                        |             |                                    |
|------------------------|-------------|------------------------------------|
| Harlingen,             | 50 bls.     | Hutchinson & Son                   |
| <b>Glue</b> —          |             |                                    |
| New York,              | 80 bgs.     |                                    |
| Dunkirk,               | 35 cks.     | Wilson, Sons, & Co., Ltd.          |
| Rotterdam,             | 10          | Hutchinson & Son                   |
| <b>Lead Acetate</b> —  |             |                                    |
| Hamburg,               | 1 ck.       | Bailey & Leatham                   |
| <b>Limestone</b> —     |             |                                    |
| Antwerp,               | 1 cs.       | Wilson, Sons, & Co., Ltd.          |
| <b>Ochre</b> —         |             |                                    |
| Marseilles,            | 91 cks.     |                                    |
| <b>Paint</b> —         |             |                                    |
| New York,              | 106 cs.     | Wilson, Sons, & Co., Ltd.          |
| <b>Phosphate</b> —     |             |                                    |
| Ghent,                 | 600 bgs.    | Wilson, Sons, & Co., Ltd.          |
| <b>Plumbago</b> —      |             |                                    |
| Genoa,                 | 250 bgs.    |                                    |
| <b>Pumice Stone</b> —  |             |                                    |
| Leghorn,               | 4 cs.       | Wilson, Sons, & Co., Ltd.          |
| <b>Saltpetre</b> —     |             |                                    |
| Hamburg,               | 5 cks.      | Lofthouse & Saltmer                |
| "                      | 20 kgs.     | Wilson, Sons, & Co., Ltd.          |
| <b>Soap</b> —          |             |                                    |
| Marseilles,            | 4 cs.       | Wilson, Sons, & Co., Ltd.          |
| "                      | 5           |                                    |
| <b>Starch</b> —        |             |                                    |
| Bremen,                | 2,164 cs.   | Veltmann & Co.                     |
| Amsterdam,             | 40          | W. & C. L. Ringrose                |
| <b>Stearine</b> —      |             |                                    |
| Antwerp,               | 16 bgs.     | Wilson, Sons, & Co., Ltd.          |
| <b>Tartar</b> —        |             |                                    |
| Marseilles,            | 20 cks.     | Wilson, Sons, & Co., Ltd.          |
| "                      | 5           |                                    |
| <b>Tartaric Acid</b> — |             |                                    |
| Rotterdam,             | 3 cks.      | Hutchinson & Son                   |
| "                      | 2           | W. & C. L. Ringrose                |
| <b>Treacle</b> —       |             |                                    |
| New York,              | 1,000 brls. | Wilson, Sons, & Co., Ltd.          |
| Stettin,               | 12 cks.     | "                                  |
| <b>Ultramarine</b> —   |             |                                    |
| Rotterdam,             | 5 cks.      | Hutchinson & Son                   |
| <b>Varnish</b> —       |             |                                    |
| New York,              | 44 pks.     | 20 brls. Wilson, Sons, & Co., Ltd. |
| <b>Waste Salt</b> —    |             |                                    |
| Hamburg,               | 650 bgs.    | Wilson, Sons, & Co., Ltd.          |
| <b>White Lead</b> —    |             |                                    |
| Antwerp,               | 18 cks.     | Bailey & Leatham                   |
| Amsterdam,             | 24          | W. & C. L. Ringrose                |
| Rotterdam,             | 40          | Hutchinson & Son                   |
| <b>Wood Pulp</b> —     |             |                                    |
| Drontheim,             | 720 bls.    | Wilson, Sons, & Co., Ltd.          |
| Bergen,                | 337         | "                                  |
| Christiania,           | 1,686       | "                                  |
| Gothenburg,            | 834         | "                                  |
| Hango,                 | 28          | J. Good & Sons                     |
| <b>Zinc White</b> —    |             |                                    |
| Rotterdam,             | 40 cks.     | Hutchinson & Son                   |

**GLASGOW.**

Week ending February 27th.

|                          |           |                  |
|--------------------------|-----------|------------------|
| <b>Acetate of Lime</b> — |           |                  |
| New York,                | 438 bgs.  |                  |
| <b>Albumen</b> —         |           |                  |
| Hamburg,                 | 7 cs.     |                  |
| <b>Alum</b> —            |           |                  |
| Hamburg,                 | 168 cks.  |                  |
| <b>Aniline Salts</b> —   |           |                  |
| Rotterdam,               | 9 cks.    | J. Rankine & Son |
| <b>Antimony</b> —        |           |                  |
| Rouen,                   | 23 loaves |                  |
| <b>Barium Sulphate</b> — |           |                  |
| Antwerp,                 | 400 bgs.  |                  |
| <b>Castor Oil</b> —      |           |                  |
| Marseilles,              | 228 brls. |                  |



**Chemicals (otherwise undescribed)**

Hamburg, 2 cs.  
**Colours—**  
 Rouen, 1 pk.  
 Rotterdam, 88 brls. 7 bxs. 1 cs.  
 J. Rankine & Son

**Cottonseed Oil—**

New York, 50 brls.

**Cream of Tartar—**

Barcelona, 12 cks.

Tarragona, 17

**Dyestuffs—**

Alizarine

Rouen, 76 pks.

10 cks. 1 cs. J. Rankine & Son

**Extracts**

Antwerp, 3 cks.

New York, 50 bxs.

**Madder**

Rouen, 8 cks. J. Rankine & Son

**Farina—**

Danzig, 100 bgs.

**French Chalk—**

Fiume, 100 bgs.

**Glucose—**

New York, 400 brls.

**Glue—**

Rouen, 35 cks. 18 bls.

New York, 86 brls.

Fiume, 300 bgs.

**Gypsum—**

Rouen, 500 bgs.

**Lead Acetate—**

Hamburg, 13 cks.

**Manure—**

Antwerp, 200 bgs.

**Minium—**

Rouen, 3 cks. J. Rankine & Son

**Ochre—**

Rouen, 28 cks.

Marseilles, 160 cs.

**Paint—**

New York, 5 cks. 30 kgs.

**Pitch—**

Marseilles, 57 cks.

**Potash—**

Rouen, 34 cks. J. Rankine & Son

**Pumice Stone—**

Messina, 8 brls. 15 cs.

15 Thomas

Hinselwood & Co.

**Rosin—**

New York, 1,654 brls.

**Saltpetre—**

Hamburg, 4 cks. 22 kgs.

**Soap—**

Marseilles, 14 cs.

Fiume, 126

Newport News, 239 brls. Geo. Hayes & Co.

**Sodium Nitrate—**

V. Buena, 16,963 bgs. Thomson, Aikman, & Co.

**Starch—**

Antwerp, 50 cs.

Rouen, 12 14 cts. J. Rankine & Son

New York, 500 sks. 1 brl.

**Stearine—**

Amsterdam, 33 bgs.

**Tallow—**

New York, 43 tcs.

**Tartar—**

Bordeaux, 8 cks.

Oporto, 7

**Tartaric Acid—**

Marseilles, 6 brls. 5 cs.

Rouen, 20 cks. J. Rankine & Son

**Varnish—**

Rouen, 6 cs.

New York, 8 1 bx.

**Waste Salt—**

Hamburg, 273 cks.

**White Lead—**

Rouen, 51 cks. J. Rankine & Son

**Wood Pulp—**

Christiania, 1,494 bls.

Fiume, 204

**Zinc Oxide—**

New York, 100 brls.

**Zinc White—**

Rouen, 70 cks. J. Rankine & Son

**TYNE.**

Week ending February 22nd.

**Alum Earth—**

Hamburg, 17 cks. Tyne S. S. Co.

**Barium Carbonate—**

Rouen, 249 bgs. Tyne S. S. Co.

**Glucose—**

New York, 100 brls. Furness, Withy, & Co.

**Kieselguhr—**

Rouen, 147 bgs. Tyne S. S. Co.

Bergen, 98

**Limestone—**

Antwerp, 1 cs. Tyne S. S. Co.

**Paint—**

Hamburg, 3 cks. Tyne S. S. Co.

**Salt—**

Hamburg, 700 t. Clephans & Wiencke

**Saltpetre—**

Hamburg, 2 cks. Tyne S. S. Co.

**Soap—**

Rouen, 4 cs. Tyne S. S. Co.

**Starch—**

Rouen, 70 cs. Tyne S. S. Co.

**Stearine—**

New York, 20 brls. Furness, Withy, & Co.

**White Lead—**

Antwerp, 28 brls. Tyne S. S. Co.

**Zinc Oxide—**

Antwerp, 10 brls. Tyne S. S. Co.

**GOOLE.**

Week ending February 19th.

**Alizarine—**

Rouen, 63 cks. 4 cs.

**Alkali—**

Calais, 2 cks.

**Alum—**

Rouen, 120 bgs.

**Caoutchouc—**

Boulogne, 16 cks.

**Colours—**

Antwerp, 4 cks.

Ghent, 19 1 cs.

Hamburg, 50 4

Antwerp, 28 brls.

**Dyestuffs (otherwise undescribed)**

Boulogne, 25 cks. 1 cs. 8 pks.

Rouen, 197 6

**Farina—**

Rouen, 400 bgs.

**Glucose—**

Hamburg, 200

**Glue—**

Calais, 100 bgs.

**Logwood—**

Rouen, 20 bgs.

**Madder—**

Rouen, 3 cks.

**Phosphate—**

Ghent, 1,500 bgs.

**Potash—**

Calais, 40 dms.

Dunkirk, 15 cks.

Hamburg, 24

**Saltpetre—**

Hamburg, 32 cks. 85 bgs.

Antwerp, 85

**Soap—**

Rouen, 2 cs.

**Wood Pulp—**

Rouen, 20 bls.

**GRIMSBY.**

Week ending February 22nd.

**Caoutchouc—**

Rouen, 2 cs.

Hamburg, 16

**Chemicals (otherwise undescribed)**

Hamburg, 14 cs. 3 cks.

Rouen, 20 pks.

**Colours—**

Antwerp, 49 cs. 3 cks. 24 pks.

Rouen, 1

Hamburg, 5 6t

**Dyes—**

Antwerp, 21 cks.

Hamburg, 4

**Plumbago—**

Hamburg, 2 cks.

**Starch—**

Hamburg, 1 cs.

Antwerp, 60

**Wood Pulp—**

Malmö, 32 bls.

**EXPORTS OF CHEMICAL PRODUCTS**

OF

**THE PRINCIPAL PORTS OF THE UNITED KINGDOM.****LONDON.**

Week ending February 26th.

**Acetic Acid—**

Brisbane, 6 cs. £14

Launceston, 3 4

Sydney, 12 25

**Acids—**

Cape Town, 14 kgs. £31

**Alkali—**

Lyttelton, 15 c. £44

Madras, 8 3

**Alum—**

Salonica, 10 t. 2 c. £58

Wellington, 10 4

**Alum Cake—**

Calcutta, 17 t. 19 c. £64

**Ammonia—**

Rouen, 40 dms. £70

**Ammonium Carbonate—**

Cape Town, 7 c. £15

Sydney, 15 cs. 28

Rouen, 9 t. 12 286

New York, 15 6 455

Adelaide, 15 31

**Ammonium Chloride—**

Rouen, 1 t. 4 c. £40

Trebizond, 15 28

Salonica, 3 5 112

Constantinople, 2 19 162

Galatz, 10 23

Auckland, 2 46

Samsoun, 10 18

**Ammonium Sulphate—**

Newfairwater, 50 t. £450

Martinique, 25 225

Canaria, 10 89

Callera, 141 12 c. 1,240

Ghent, 100 900

Barbadoes, 51 459

Philadelphia, 100 850

Hamburg, 150 1,255

Ostend, 825 6,390

**Anhydrous Ammonia—**

Rouen, 5 cyldrs. £45

**Arsenic—**

Napier, 1 t. £19

Sydney, 5 88

**Barium Nitrate—**

Madras, 4 kgs. £10

New York, 1 t. 17

**Bisulphite of Lime—**

Cape Town, 1 t. 1 c. £13

**Bleaching Powder—**

E. London, 1 t. 7 c. £17

**Borax—**

Adelaide, 5 c. £5

Sydney, 1 t. 22

Brisbane, 10 10

Townsville, 5 6

Rouen, 5 13

Madras, 8 17

Dunedin, 5 13 kgs 20

**Camphor—**

E. London, 1 cs. £11

**Carbolic Acid—**

Rouen, 24 cks. £45

Rouen, 48 175

Marseilles, 80 135

San Francisco, 10 67

New York, 20 138

Yokohama, 230 dms. 647

Higo, 50 140

Trinidad, 8 c. 12

Hong Kong, 20 7

Newport News, 16 153

Cape Town, 4 13

**Carbonic Acid—**

Grenada, 1 t. £1

Higo, 14 787

Fremantle, 2 c. 15

**Carbonic Acid Gas—**

Antwerp, 4 c. £9

**Caustic Potash—**

Adelaide, 5 dms. £30

**Caustic Soda—**

Cape Town, 17 c. £17

Brisbane, 10 18

Algoa Bay, 14 21

Napier, 10 21

Melbourne, 6 t. 2 106

Dunedin, 20 186

New York, 78 3 78

E. London, 10 19

Philadelphia, 75 600

Lyttel



|                                           |              |            |                                    |             |                |                      |       |     |                    |    |     |                           |      |          |
|-------------------------------------------|--------------|------------|------------------------------------|-------------|----------------|----------------------|-------|-----|--------------------|----|-----|---------------------------|------|----------|
| <b>Anthracene</b>                         |              |            | <b>Muriatic Acid—</b>              |             |                | <b>Tin Crystals—</b> |       |     | <b>Marseilles,</b> |    |     | <b>Carbon Bisulphide—</b> |      |          |
| Dusseldorf,                               | 585 cks.     | £2,798     | Algoa Bay,                         | 10 cs.      | £7             | Barbadoes,           | 5 c.  | £18 | 19                 | 3  | 60  | Bahia,                    | 4 c. | 1 q. £10 |
| Rotterdam,                                | 365          | 1,546      | <b>Phosphate—</b>                  |             |                | <b>Zinc Oxide—</b>   |       |     | 5                  | 17 | 76  |                           |      |          |
| <b>Benzol</b>                             |              |            | Sydney,                            | 5 t.        | £15            | Sydney,              | 10 c. | £11 | 5                  | 10 | 260 |                           |      |          |
| Boston,                                   | 4 dms.       | £60        | <b>Phosphorus—</b>                 |             |                |                      |       |     | Bombay,            | 3  | 47  |                           |      |          |
| Rotterdam,                                | 272 cks.     | 997        | Dunedin,                           | 18 c.       | 1 kg. £205     |                      |       |     | Yokohama,          | 10 | 2   | 1                         | 890  |          |
| Hamburg,                                  | 45 rnlts.    | 210        | Alexandria,                        | 12 cs.      | 131            |                      |       |     | Venice,            | 1  | 2   | 1                         | 77   |          |
| <b>Creosote</b>                           |              |            | Wellington,                        | 20          | 12             | 316                  |       |     | Barcelona,         | 10 |     |                           | 31   |          |
| New York,                                 | 500 brls.    | £225       | <b>Potash—</b>                     |             |                |                      |       |     | Valencia,          | 4  |     |                           | 16   |          |
| <b>Creosote Salts</b>                     |              |            | Hong Kong,                         | 10 c.       | £25            |                      |       |     |                    |    |     |                           |      |          |
| Philadelphia,                             | 1,021 bgs.   | £148       | Wellington,                        | 19          | 47             |                      |       |     |                    |    |     |                           |      |          |
| <b>Naphtha</b>                            |              |            | <b>Potash Crystals—</b>            |             |                |                      |       |     |                    |    |     |                           |      |          |
| Boston,                                   | 5 cks.       | £15        | New York,                          | 6 cks.      |                |                      |       |     |                    |    |     |                           |      |          |
| Treport,                                  | 15 brls.     | 43         | <b>Potash Salts—</b>               |             |                |                      |       |     |                    |    |     |                           |      |          |
| <b>Naphthaline</b>                        |              |            | Auckland,                          | 25 t. 14 c. | £2,512         |                      |       |     |                    |    |     |                           |      |          |
| Sydney,                                   | 9 cks.       | £22        | <b>Potassium Carbonate—</b>        |             |                |                      |       |     |                    |    |     |                           |      |          |
| New York,                                 | 88           | 82         | Adelaide,                          | 1 ck.       | £12            |                      |       |     |                    |    |     |                           |      |          |
| Hamburg,                                  | 4            | 9          | <b>Potassium Chlorate—</b>         |             |                |                      |       |     |                    |    |     |                           |      |          |
| Brussels,                                 | 50 bgs.      | 27         | Boston,                            | 10 c.       | £23            |                      |       |     |                    |    |     |                           |      |          |
| Paris,                                    | 150          | 70         | <b>Potassium Cyanide—</b>          |             |                |                      |       |     |                    |    |     |                           |      |          |
| <b>Pitch</b>                              |              |            | Algoa Bay,                         | 3 c.        | £14            |                      |       |     |                    |    |     |                           |      |          |
| Newport News,                             | 150 cks.     | £89        | Sydney,                            | 10          | 70             |                      |       |     |                    |    |     |                           |      |          |
| Auckland,                                 | 11 pks.      | 7          | <b>Potassium Iodide—</b>           |             |                |                      |       |     |                    |    |     |                           |      |          |
| Dunkirk,                                  | 950 t.       | 1,878      | Algoa Bay,                         | 1 cs.       | £32            |                      |       |     |                    |    |     |                           |      |          |
| Boston,                                   | 300 brls.    | 130        | <b>Potassium Prussiate—</b>        |             |                |                      |       |     |                    |    |     |                           |      |          |
| Hamburg,                                  | 4            | 16         | Antwerp,                           | 1 ck.       | £34            |                      |       |     |                    |    |     |                           |      |          |
| Salonica,                                 | 15           | 40         | <b>Potassium Sulphate—</b>         |             |                |                      |       |     |                    |    |     |                           |      |          |
| Alexandria,                               | 200          | 80         | Cape Town,                         | 1 t.        | £11            |                      |       |     |                    |    |     |                           |      |          |
| <b>Pitch and Tar</b>                      |              |            | <b>Saltpetre—</b>                  |             |                |                      |       |     |                    |    |     |                           |      |          |
| Levuka,                                   | 10 brls.     | £8         | Pernambuco,                        | 3 t. 6 c.   | £78            |                      |       |     |                    |    |     |                           |      |          |
| Sydney,                                   | 104 pks.     | 40         | Cape Town,                         | 8           | 11             |                      |       |     |                    |    |     |                           |      |          |
| <b>Tar</b>                                |              |            | Gothenburg,                        | 1           | 22             |                      |       |     |                    |    |     |                           |      |          |
| E. London,                                | 125 dms.     | £6         | Sydney,                            | 3           | 63             |                      |       |     |                    |    |     |                           |      |          |
| St. Lucia,                                | 10 brls.     | 11         | Dunedin,                           | 2           | 47             |                      |       |     |                    |    |     |                           |      |          |
| Wellington,                               | 20           | 4          | Perth,                             | 10          | 12             |                      |       |     |                    |    |     |                           |      |          |
| Algoa Bay,                                | 130          | 9          | Bahia,                             | 1           | 43             |                      |       |     |                    |    |     |                           |      |          |
| Brisbane,                                 | 30           | 11         | Rio (Brazil),                      | 3           | 70             |                      |       |     |                    |    |     |                           |      |          |
| <b>Copper Sulphate—</b>                   |              |            | <b>Sheep Dip—</b>                  |             |                |                      |       |     |                    |    |     |                           |      |          |
| Odessa,                                   | 10 t. 4 c.   | £164       | Pt. Elizabeth,                     | 14 t. 17 c. | 500 cs. £1,530 |                      |       |     |                    |    |     |                           |      |          |
| Adelaide,                                 | 2            | 32         | Wellington,                        | 15 cks.     | 75             |                      |       |     |                    |    |     |                           |      |          |
| Genoa,                                    | 18           | 303        | Calcutta,                          | 60 pks.     | 37             |                      |       |     |                    |    |     |                           |      |          |
| Naples,                                   | 27           | 451        | Cape Town,                         | 3           | 75             |                      |       |     |                    |    |     |                           |      |          |
| Treport,                                  | 20           | 335        | Christchurch,                      | 60 dms.     | 120            |                      |       |     |                    |    |     |                           |      |          |
| Seville,                                  | 3            | 60         | B. Ayres,                          | 40          | 1,355          |                      |       |     |                    |    |     |                           |      |          |
| Paris,                                    | 111          | 1,873      | Algoa Bay,                         | 4           | 1,250          |                      |       |     |                    |    |     |                           |      |          |
| Marseilles,                               | 50           | 794        | E. London,                         | 26          | 600 cs. 250    | 1,798                |       |     |                    |    |     |                           |      |          |
| Bordeaux,                                 | 15           | 270        | <b>Soda Crystals—</b>              |             |                |                      |       |     |                    |    |     |                           |      |          |
| Brisbane,                                 | 34           | 512        | Demerara,                          | 16 c.       | £2             |                      |       |     |                    |    |     |                           |      |          |
| Lyttelton,                                | 1            | 17         | Sulina,                            | 13          | 3              |                      |       |     |                    |    |     |                           |      |          |
| <b>Cream of Tartar—</b>                   |              |            | <b>Sodium Acetate—</b>             |             |                |                      |       |     |                    |    |     |                           |      |          |
| Napier,                                   | 4 c.         | £20        | Melbourne,                         | 5 cks.      | £18            |                      |       |     |                    |    |     |                           |      |          |
| Christchurch,                             | 10           | 48         | <b>Sodium Amalgamate—</b>          |             |                |                      |       |     |                    |    |     |                           |      |          |
| Hessel Bay,                               | 2 cs.        | 12         | E. London,                         | 1 cs.       | £15            |                      |       |     |                    |    |     |                           |      |          |
| Natal,                                    | 11           | 61         | <b>Sodium Bicarbonate—</b>         |             |                |                      |       |     |                    |    |     |                           |      |          |
| Fremantle,                                | 11           | 11         | Ostend,                            | 1 t.        | £7             |                      |       |     |                    |    |     |                           |      |          |
| Adelaide,                                 | 4 t. 17      | 498        | Adelaide,                          | 3 c.        | 1              |                      |       |     |                    |    |     |                           |      |          |
| Wellington,                               | 2            | 238        | Marseilles,                        | 10          | 75             |                      |       |     |                    |    |     |                           |      |          |
| Sydney,                                   | 2            | 193        | Lyttelton,                         | 1           | 7              |                      |       |     |                    |    |     |                           |      |          |
| <b>Disinfectants—</b>                     |              |            | <b>Sodium Bisulphite—</b>          |             |                |                      |       |     |                    |    |     |                           |      |          |
| Trinidad,                                 | 19 c.        | £54        | Melbourne,                         | 1 t. 16 c.  | £18            |                      |       |     |                    |    |     |                           |      |          |
| Barbadoes,                                | 11 pks.      | 14         | <b>Sodium Carbonate—</b>           |             |                |                      |       |     |                    |    |     |                           |      |          |
| Durban,                                   | 90 cks.      | 55 dms. 57 | Fremantle,                         | 5 c.        | £4             |                      |       |     |                    |    |     |                           |      |          |
| Hamburg,                                  | 1            | 16         | <b>Sodium Prussiate—</b>           |             |                |                      |       |     |                    |    |     |                           |      |          |
| Sydney,                                   | 59 cs.       | 92         | Antwerp,                           | 22 cks.     | £332           |                      |       |     |                    |    |     |                           |      |          |
| Mosel Bay,                                | 2            | 5          | <b>Sodium Sulphate—</b>            |             |                |                      |       |     |                    |    |     |                           |      |          |
| Brisbane,                                 | 16           | 57         | Ghent,                             | 40 t.       | £55            |                      |       |     |                    |    |     |                           |      |          |
| Demerara,                                 | 1            | 6          | <b>Strontium Nitrate—</b>          |             |                |                      |       |     |                    |    |     |                           |      |          |
| Cape Town,                                | 1            | 6          | Boston,                            | 10 c.       | £14            |                      |       |     |                    |    |     |                           |      |          |
| E. London,                                | 12 c.        | 8          | <b>Sulphites of Lime and Soda—</b> |             |                |                      |       |     |                    |    |     |                           |      |          |
| Auckland,                                 | 3            | 7          | New York,                          | 20 cs.      | £250           |                      |       |     |                    |    |     |                           |      |          |
| Bermuda,                                  | 6            | 15         | <b>Sulphur—</b>                    |             |                |                      |       |     |                    |    |     |                           |      |          |
| Jamaica,                                  | 50 dms. 11   | 36         | Lisbon,                            | 1 c.        | £21            |                      |       |     |                    |    |     |                           |      |          |
| Madras,                                   | 3 t. 5       | 36         | Philadelphia,                      | 5 t. 12     | 184            |                      |       |     |                    |    |     |                           |      |          |
| Zanzibar,                                 | 5            | 21         | Algoa Bay,                         | 4           | 30 kgs. 46     |                      |       |     |                    |    |     |                           |      |          |
| <b>Dye-stuffs (otherwise undescribed)</b> |              |            | Dunedin,                           | 1           | 6              |                      |       |     |                    |    |     |                           |      |          |
| Dunedin,                                  | 4 cks.       | £60        | <b>Sulphuric Acid—</b>             |             |                |                      |       |     |                    |    |     |                           |      |          |
| Lyttelton,                                | 6            | 124        | Beira,                             | 25 cs.      | £12            |                      |       |     |                    |    |     |                           |      |          |
| <b>Fluoric Acid—</b>                      |              |            | E. London,                         | 7 t. 7 c.   | 50             |                      |       |     |                    |    |     |                           |      |          |
| Cape Town,                                | 1 cs.        | £8         | Christchurch,                      | 13 dms.     | 12             | 20                   |       |     |                    |    |     |                           |      |          |
| <b>Hydrochloric Acid—</b>                 |              |            | <b>Superphosphates—</b>            |             |                |                      |       |     |                    |    |     |                           |      |          |
| E. London,                                | 10 cs.       | £12        | Canaria,                           | 10 t.       | £41            |                      |       |     |                    |    |     |                           |      |          |
| <b>Guano—</b>                             |              |            | Cullera,                           | 151         | 10 c.          | 360                  |       |     |                    |    |     |                           |      |          |
| Cullera,                                  | 406 t. 19 c. | £2,840     | <b>Tartaric Acid—</b>              |             |                |                      |       |     |                    |    |     |                           |      |          |
| Demerara,                                 | 20           | 220        | Dunedin,                           | 5 cs.       | £32            |                      |       |     |                    |    |     |                           |      |          |
| <b>Nitric Acid—</b>                       |              |            | Delagoa Bay,                       | 2           | 8              |                      |       |     |                    |    |     |                           |      |          |
| Madras,                                   | 1 c.         | £4         | Napier,                            | 2 c.        | 12             |                      |       |     |                    |    |     |                           |      |          |
| Wellington,                               | 4 cs.        | 7          | Cape Town,                         | 2           | 15             |                      |       |     |                    |    |     |                           |      |          |
| <b>Manure—</b>                            |              |            | Wellington,                        | 1           | 7              |                      |       |     |                    |    |     |                           |      |          |
| Rouen,                                    | 212 t.       | £670       | Brisbane,                          | 1           | 4              | 51                   |       |     |                    |    |     |                           |      |          |
| Oporto,                                   | 33           | 83         | Natal,                             | 1           | 19             | 51                   |       |     |                    |    |     |                           |      |          |
| Genoa,                                    | 27           | 13 c.      | Fremantle,                         | 8           | 5              | 51                   |       |     |                    |    |     |                           |      |          |
| Caen,                                     | 116          | 348        | Adelaide,                          | 4 t. 1      | 513            |                      |       |     |                    |    |     |                           |      |          |
| Ghent,                                    | 20           | 50         | Hamburg,                           | 10          | 67             |                      |       |     |                    |    |     |                           |      |          |
| Guernsey,                                 | 1            | 23         | Melbourne,                         | 5           | 33             |                      |       |     |                    |    |     |                           |      |          |
| Jersey,                                   | 41           | 346        | Calcutta,                          | 4           | 29             |                      |       |     |                    |    |     |                           |      |          |
| New York,                                 | 49           | 420        | Valparaiso,                        | 1           | 133            |                      |       |     |                    |    |     |                           |      |          |
| Jamaica,                                  | 54           | 526        |                                    |             |                |                      |       |     |                    |    |     |                           |      |          |
| Morlaix,                                  | 164          | 8          |                                    |             |                |                      |       |     |                    |    |     |                           |      |          |
| Treport,                                  | 19           | 14         |                                    |             |                |                      |       |     |                    |    |     |                           |      |          |
| Bordeaux,                                 | 35           | 1          |                                    |             |                |                      |       |     |                    |    |     |                           |      |          |
| Gothenburg,                               | 49           | 5          |                                    |             |                |                      |       |     |                    |    |     |                           |      |          |
| Pt. Elizabeth,                            | 5            | 10         |                                    |             |                |                      |       |     |                    |    |     |                           |      |          |
| Cape Town,                                | 250          | 623        |                                    |             |                |                      |       |     |                    |    |     |                           |      |          |

## LIVERPOOL.

Week ending February 26th.

|                            |             |             |           |                        |         |          |           |                      |         |          |     |
|----------------------------|-------------|-------------|-----------|------------------------|---------|----------|-----------|----------------------|---------|----------|-----|
| <b>Alum—</b>               |             |             |           | <b>Caustic Potash—</b> |         |          |           | <b>Caustic Soda—</b> |         |          |     |
| Sydney,                    | 1 t.        |             | £5        | Antwerp,               | 5 t.    | 1 c.     | £160      | Alicante,            | 10 dms. |          |     |
| St. John, N.B.,            | 2           | 15 c.       | 14        | Melbourne,             | 2       |          | 36        | Ancona,              | 16      |          |     |
| Ancona,                    | 3           |             | 15        | Adelaide,              |         | 10       | 15        | Antwerp,             | 35      | 29 brls. |     |
| Melbourne,                 | 2           |             | 13        |                        |         |          |           | Baltimore,           | 450     |          |     |
| Santos,                    | 1           |             | 1 q. 5    |                        |         |          |           | Barcelona,           | 50      | 75 cks.  |     |
| Gibraltar,                 | 1           | 10          | 3         |                        |         |          |           | Bari,                | 155     |          |     |
| Ibrail,                    | 1           | 9           | 4         |                        |         |          |           | Bombay,              | 56      |          |     |
| Rabat,                     | 2           | 2           | 1         |                        |         |          |           | Boston,              |         | 60       | 100 |
| Piræus,                    | 2           | 16          | 1         |                        |         |          |           | Bremen,              |         |          | 5   |
| Rio de Janeiro,            | 10 hf. tcs. | 20 kgs.     | 19        |                        |         |          |           | Callao,              | 40      |          |     |
| Sydney,                    | 3 t.        | 10 c.       | 17        |                        |         |          |           | Catania,             | 88      |          |     |
| Rettimo,                   |             | 12          | 3         |                        |         |          |           | Constantinople,      | 10      |          |     |
| Galatz,                    | 23          |             | 128       |                        |         |          |           | Corinto,             |         | 20 kgs.  |     |
| Kustendjie,                | 3           | 18          | 3 q. 19   |                        |         |          |           | E. London,           |         | 16 bxs.  |     |
| <b>Alumina sulphate—</b>   |             |             |           |                        |         |          |           |                      |         |          |     |
| Santos,                    | 1 t.        |             | £5        |                        |         |          |           |                      |         |          |     |
| Rio de Janeiro,            |             | 12 hf. tcs. | 9         |                        |         |          |           |                      |         |          |     |
| M. Video,                  | 5           |             | 25        |                        |         |          |           |                      |         |          |     |
| <b>Aluminous Cake—</b>     |             |             |           |                        |         |          |           |                      |         |          |     |
| Calcutta,                  | 26 t.       | 1 c.        | 4 q. £93  |                        |         |          |           |                      |         |          |     |
| Melbourne,                 | 6           | 2           | 3         |                        |         |          |           |                      |         |          |     |
| St. John, N.B.,            | 12          | 1           | 32        |                        |         |          |           |                      |         |          |     |
| Portland M.,               | 10          |             | 30        |                        |         |          |           |                      |         |          |     |
| <b>Ammonium Carbonate—</b> |             |             |           |                        |         |          |           |                      |         |          |     |
| Marseilles,                | 10 c.       | 1 q.        | £17       |                        |         |          |           |                      |         |          |     |
| Amsterdam,                 | 10          |             | 9         |                        |         |          |           |                      |         |          |     |
| Oporto,                    | 9           |             | 15        |                        |         |          |           |                      |         |          |     |
| <b>Ammonium Chloride—</b>  |             |             |           |                        |         |          |           |                      |         |          |     |
| Yokohama,                  | 10 c.       |             | £12       |                        |         |          |           |                      |         |          |     |
| Ibrail,                    | 9           |             | 17        |                        |         |          |           |                      |         |          |     |
| Smyrna,                    | 12          |             | 21        |                        |         |          |           |                      |         |          |     |
| Amsterdam,                 | 5           | 1 q.        | 9         |                        |         |          |           |                      |         |          |     |
| Boston,                    | 3           | 1           | 7         |                        |         |          |           |                      |         |          |     |
| Seville,                   | 10          | 2           | 70        |                        |         |          |           |                      |         |          |     |
| Alexandria,                | 1 t.        | 10 brls.    | 74        |                        |         |          |           |                      |         |          |     |
| <b>Ammonium Sulphate—</b>  |             |             |           |                        |         |          |           |                      |         |          |     |
| Samarang,                  | 37 t.       | 1 c.        | 1 q. £444 |                        |         |          |           |                      |         |          |     |
| W. C. Africa,              | 31          |             | 270       |                        |         |          |           |                      |         |          |     |
| Gd. Canary,                | 20          | 14          | 2         |                        |         |          |           |                      |         |          |     |
| Valencia,                  | 87          | 4           | 3         |                        |         |          |           |                      |         |          |     |
| Las Palmas,                | 29          |             | 2         |                        |         |          |           |                      |         |          |     |
| Rio de Janeiro,            | 5           |             | 41        |                        |         |          |           |                      |         |          |     |
| Cullera,                   | 222         | 5           | 5         |                        |         |          |           |                      |         |          |     |
| Palermo,                   | 24          | 18          | 2         |                        |         |          |           |                      |         |          |     |
| Ghent,                     | 50          | 19          | 450       |                        |         |          |           |                      |         |          |     |
| <b>Barium Chlorate—</b>    |             |             |           |                        |         |          |           |                      |         |          |     |
| Hamburg,                   |             | 4 c.        | £15       |                        |         |          |           |                      |         |          |     |
| <b>Bleaching Powder—</b>   |             |             |           |                        |         |          |           |                      |         |          |     |
| Ancona,                    |             | 12 cks      |           |                        |         |          |           |                      |         |          |     |
| Baltimore,                 | 107         |             |           |                        |         |          |           |                      |         |          |     |
| Bombay,                    |             |             | 30 cs.    |                        |         |          |           |                      |         |          |     |
| Boston,                    | 516         |             |           |                        |         |          |           |                      |         |          |     |
| Calamata,                  |             | 15 brls.    |           |                        |         |          |           |                      |         |          |     |
| Calcutta,                  |             |             | 306       |                        |         |          |           |                      |         |          |     |
| Corfu,                     |             | 15          |           |                        |         |          |           |                      |         |          |     |
| Dunkirk,                   | 18          |             |           |                        |         |          |           |                      |         |          |     |
| E. London,                 |             |             | 20 dms.   |                        |         |          |           |                      |         |          |     |
| Genoa,                     | 146         |             |           |                        |         |          |           |                      |         |          |     |
| Halifax,                   | 19          |             |           |                        |         |          |           |                      |         |          |     |
| Leghorn,                   | 31          |             |           |                        |         |          |           |                      |         |          |     |
| Lisbon,                    | 40          |             |           |                        |         |          |           |                      |         |          |     |
| Melbourne,                 |             | 67          |           |                        |         |          |           |                      |         |          |     |
| Nantes,                    | 15          |             |           |                        |         |          |           |                      |         |          |     |
| Naples,                    | 15          | 15          |           |                        |         |          |           |                      |         |          |     |
| Newport News,              | 81          |             |           |                        |         |          |           |                      |         |          |     |
| New York,                  | 437         |             |           |                        |         |          |           |                      |         |          |     |
| Oporto,                    | 22          |             |           |                        |         |          |           |                      |         |          |     |
| Piræus,                    | 3           |             |           |                        |         |          |           |                      |         |          |     |
| Portland,                  | 54          |             |           |                        |         |          |           |                      |         |          |     |
| Rosario,                   |             | 10          |           |                        |         |          |           |                      |         |          |     |
| Rouen,                     | 14          |             |           |                        |         |          |           |                      |         |          |     |
| St. John, N.B.,            |             |             | 5 cs.     |                        |         |          |           |                      |         |          |     |
| San Sebastian,             | 57          |             |           |                        |         |          |           |                      |         |          |     |
| <b>Boric Acid—</b>         |             |             |           |                        |         |          |           |                      |         |          |     |
| Calcutta,                  | 1 t.        |             | £28       |                        |         |          |           |                      |         |          |     |
| <b>Borax—</b>              |             |             |           |                        |         |          |           |                      |         |          |     |
| Hiego,                     | 3 t.        | 9 c.        | £64       |                        |         |          |           |                      |         |          |     |
| Yokohama,                  | 3           | 8           | 3 q. 68   |                        |         |          |           |                      |         |          |     |
| Venice,                    | 1           |             | 20        |                        |         |          |           |                      |         |          |     |
| Hamburg,                   | 1           | 5           | 26        |                        |         |          |           |                      |         |          |     |
| Portland, M.,              |             | 12          | 12        |                        |         |          |           |                      |         |          |     |
| Antwerp,                   | 5           | 5           | 3         |                        |         |          |           |                      |         |          |     |
| St. John, N.B.,            |             | 18          | 3         |                        |         |          |           |                      |         |          |     |
| Kustendjie,                | 5           | 10          | 102       |                        |         |          |           |                      |         |          |     |
| Stettin,                   | 3           |             | 62        |                        |         |          |           |                      |         |          |     |
| Rotterdam,                 | 17          | 2           | 6         |                        |         |          |           |                      |         |          |     |
| New York,                  | 2           | 19          | 2         |                        |         |          |           |                      |         |          |     |
| <b>Carbolic Acid—</b>      |             |             |           |                        |         |          |           |                      |         |          |     |
| Kobe,                      | 2 t.        | 7 c.        | 2 q. £126 |                        |         |          |           |                      |         |          |     |
| Hong Kong,                 |             | 5           | 1         |                        |         |          |           |                      |         |          |     |
| Hiego,                     | 6           | 2           | 1         |                        |         |          |           |                      |         |          |     |
| Newport News,              | 6           | 10          | 3         |                        |         |          |           |                      |         |          |     |
| New York,                  | 3           |             | 168       |                        |         |          |           |                      |         |          |     |
|                            |             |             |           | <b>China Clay—</b>     |         |          |           |                      |         |          |     |
|                            |             |             |           | Baltimore,             | 130 t.  |          |           |                      |         |          |     |
|                            |             |             |           | Boston,                | 1,098   |          |           |                      |         |          |     |
|                            |             |             |           | Genoa,                 | 18      |          |           |                      |         |          |     |
|                            |             |             |           | Melbourne,             | 6 cks.  |          |           |                      |         |          |     |
|                            |             |             |           | New York,              | 200     |          |           |                      |         |          |     |
|                            |             |             |           | Philadelphia,          |         | 220 bgs. |           |                      |         |          |     |
|                            |             |             |           | Rangoon,               | 4       |          |           |                      |         |          |     |
|                            |             |             |           | Rio de Janeiro,        | 50      |          |           |                      |         |          |     |
|                            |             |             |           | <b>Citric Acid—</b>    |         |          |           |                      |         |          |     |
|                            |             |             |           | Reval,                 | 3 t.    | 15 c.    | 2 q. £450 |                      |         |          |     |
|                            |             |             |           | <b>Coal Products—</b>  |         |          |           |                      |         |          |     |
|                            |             |             |           | <b>Aniline Dye</b>     |         |          |           |                      |         |          |     |
|                            |             |             |           | Barcelona,             | 1 cs.   |          |           |                      |         |          |     |
|                            |             |             |           | <b>Aniline Oil</b>     |         |          |           |                      |         |          |     |
|                            |             |             |           | Barcelona,             | 10 cks. |          |           |                      |         |          |     |
|                            |             |             |           | Boston,                | 4 dms.  |          |           |                      |         |          |     |
|                            |             |             |           | Newport News,          | 15      |          |           |                      |         |          |     |
|                            |             |             |           | <b>Aniline Salts</b>   |         |          |           |                      |         |          |     |
|                            |             |             |           | Barcelona,             | 10 cks. |          |           |                      |         |          |     |
|                            |             |             |           | Boston,                | 39      |          |           |                      |         |          |     |
|                            |             |             |           | Philadelphia,          | 20 cs.  |          |           |                      |         |          |     |







|                                           |  |
|-------------------------------------------|--|
| <b>Carbolic Acid</b> —                    |  |
| Treport, 180 bbls.                        |  |
| <b>Caustic Soda</b> —                     |  |
| Jaffa, 20 dms.                            |  |
| <b>Chemicals (otherwise undescribed)</b>  |  |
| Bombay, 5 cks.                            |  |
| Hamburg, 2 cks.                           |  |
| Treport, 3 70 kgs.                        |  |
| <b>Coal Products (otherwise undes.)</b> — |  |
| Hamburg, 41 cks.                          |  |
| Rotterdam, 410 48 brls. 2 dms.            |  |
| <b>Colours</b> —                          |  |
| Bombay, 3 cks.                            |  |
| Rotterdam, 1 ck.                          |  |
| <b>Copperas</b> —                         |  |
| Alexandria, 69 cks.                       |  |
| <b>Extracts</b> —                         |  |
| Barcelona, 13 cks 35 sks. 1 bx.           |  |
| Gothenburg, 27                            |  |
| <b>Gelstine</b> —                         |  |
| Barcelona, 1 ck.                          |  |
| <b>Glue</b> —                             |  |
| Bombay, 1 ck.                             |  |
| Rotterdam, 10                             |  |
| <b>Paraffin Wax</b> —                     |  |
| Barcelona, 70 bgs.                        |  |
| <b>Salt</b> —                             |  |
| Rotterdam, 200 t. 1 bg.                   |  |
| <b>Tar Oil</b> —                          |  |
| Treport, 26 cks.                          |  |
| <b>Tar Salts</b> —                        |  |
| Rotterdam, 4 cks.                         |  |

**HULL.**

Week ending February 22nd.

|                                          |  |
|------------------------------------------|--|
| <b>Ammonium Sulphate</b> —               |  |
| Antwerp, 400 bgs.                        |  |
| Dunkirk, 430                             |  |
| Ghent, 2,212                             |  |
| Rotterdam, 500                           |  |
| <b>Benzol</b> —                          |  |
| Amsterdam, 13 dms.                       |  |
| <b>Chemicals (otherwise undescribed)</b> |  |
| Amsterdam, 30 cks.                       |  |
| Boston, 28                               |  |
| Christiania, 12 20 cs. 10 pks.           |  |
| Copenhagen, 1 50                         |  |
| Drontheim, 1 10                          |  |
| Gothenburg, 1 26 13                      |  |
| Hango, 1                                 |  |
| Hamburg, 220                             |  |
| New York, 50                             |  |
| Rotterdam, 27 78 2                       |  |
| Rouen, 7                                 |  |
| Stettin, 14                              |  |
| <b>Cottonseed Oil</b> —                  |  |
| Amsterdam, 1,186 c                       |  |
| Antwerp, 1,582                           |  |
| Christiania, 42                          |  |
| Ghent, 202                               |  |
| Hamburg, 1,211                           |  |
| Rotterdam, 1,541                         |  |
| Stettin, 657                             |  |
| <b>Dyestuffs (otherwise undescribed)</b> |  |
| Amsterdam, 1 ck.                         |  |
| Antwerp, 5 1 cs. 13 kgs.                 |  |
| Boston, 7                                |  |
| Ghent, 1                                 |  |
| Rotterdam, 37                            |  |
| <b>Glue</b> —                            |  |
| Ghent, 4 cks. 20 bgs.                    |  |
| <b>Linseed Oil</b> —                     |  |
| Amsterdam, 253 c.                        |  |
| Antwerp, 6                               |  |
| Christiania, 295                         |  |
| Drontheim, 100                           |  |
| Hamburg, 171                             |  |
| Rotterdam, 43                            |  |
| Stettin, 97                              |  |
| <b>Manure</b> —                          |  |
| Bordeaux, 67 bgs.                        |  |
| Harburg, 912 t.                          |  |
| <b>Painters' Colours</b> —               |  |
| Amsterdam, 17 cks. 2 pks.                |  |
| Antwerp, 34 3 cs. 11                     |  |
| 141 dms.                                 |  |
| Christiania, 6 2 cks.                    |  |
| Copenhagen, 11                           |  |
| Drontheim, 1 3                           |  |
| Dunkirk, 2                               |  |
| Ghent, 13                                |  |
| Hamburg, 13                              |  |
| New York, 61                             |  |
| Rotterdam, 12                            |  |
| Rouen, 5                                 |  |
| Stettin, 8                               |  |

|                       |  |
|-----------------------|--|
| <b>Pitch</b> —        |  |
| Antwerp, 180 t.       |  |
| Dunkirk, 160          |  |
| <b>Salt</b> —         |  |
| Barbadoes, 803 t.     |  |
| Calcutta, 560         |  |
| Vancouver, 3,000 bgs. |  |
| <b>Soap</b> —         |  |
| Gothenburg, 1 cs.     |  |
| <b>Starch</b> —       |  |
| Christiania, 10 bgs.  |  |
| <b>Tallow</b> —       |  |
| Amsterdam, 25 kgs.    |  |
| Gothenburg, 5 cks.    |  |
| <b>Tar</b> —          |  |
| Amsterdam, 10 cks.    |  |
| Antwerp, 4            |  |
| Hamburg, 3            |  |
| Rotterdam, 5          |  |
| Selact, 110 t.        |  |
| <b>Treacle</b> —      |  |
| Bergen, 25 tcs.       |  |
| Drontheim, 25 brls.   |  |
| <b>Varnish</b> —      |  |
| Antwerp, 3 cks. 6 cs. |  |
| Copenhagen, 2 cans    |  |
| Dunkirk, 1            |  |
| Hamburg, 1 2 pks.     |  |
| Rotterdam, 1          |  |

**GLASGOW.**

Week ending February 27th.

|                                           |  |
|-------------------------------------------|--|
| <b>Asbestos</b> —                         |  |
| Madras, £39                               |  |
| <b>Ammonium Sulphate</b> —                |  |
| Mauritius, 12 t. 10 c.                    |  |
| Hamburg, 101 5                            |  |
| <b>Bleaching Powder</b> —                 |  |
| Calcutta, 75 t. 12 c.                     |  |
| U.S.A., 7 1                               |  |
| <b>Borax</b> —                            |  |
| Yokohama, £62                             |  |
| <b>Carbolic Acid</b> —                    |  |
| Germany, 11 t.                            |  |
| <b>Castor Oil</b> —                       |  |
| Santos, £120                              |  |
| E. London, 21                             |  |
| <b>China Clay</b> —                       |  |
| Rio de Janeiro, 7 t. 14 c.                |  |
| <b>Coal Products</b> —                    |  |
| Benzol, 5 t.                              |  |
| <b>Creosote Oil</b>                       |  |
| Christiania, £15                          |  |
| Hamburg, 91                               |  |
| <b>Naphtha</b>                            |  |
| Dieppe, 37 t.                             |  |
| <b>Pitch</b>                              |  |
| Bombay, £335                              |  |
| Gothenburg, 176                           |  |
| La Rochelle, 1,059                        |  |
| Spain, 1,450                              |  |
| Hamburg, 12 t. 5 c.                       |  |
| Canada, 30                                |  |
| U.S.A., 40                                |  |
| Dunkirk, 375                              |  |
| <b>Tar</b>                                |  |
| Calcutta, £71                             |  |
| Madras, 78                                |  |
| <b>Tar and Pitch</b>                      |  |
| Karachi, £126                             |  |
| <b>Coal Products (otherwise undes.)</b> — |  |
| Rotterdam, £100                           |  |
| <b>Copperas</b> —                         |  |
| Karachi, £39                              |  |
| Bombay, 36                                |  |
| Calcutta, £49                             |  |
| Bombay, 35 t. 12½ c.                      |  |
| <b>Lead Acetate</b> —                     |  |
| Calcutta, £83                             |  |
| <b>Linseed Oil</b> —                      |  |
| Mauritius, 2 t. 10½ c.                    |  |
| <b>Litharge</b> —                         |  |
| Bombay, £25                               |  |
| <b>Magnesium Sulphate</b> —               |  |
| Santos, £20                               |  |
| Mauritius, 43                             |  |
| Christiania, 34                           |  |
| <b>Manganese Oxide</b> —                  |  |
| U.S.A., £160                              |  |
| <b>Paint</b> —                            |  |
| Bombay, £101                              |  |
| Colombo, 34                               |  |
| <b>Painters' Colours</b> —                |  |
| Hoog Kong, £52                            |  |
| Calcutta, 328                             |  |

|                               |  |
|-------------------------------|--|
| Cape Town, 47                 |  |
| Colombo, 140                  |  |
| <b>Paraffin Wax</b> —         |  |
| Bombay, £87                   |  |
| Bordeaux, 115                 |  |
| Cape Town, 45                 |  |
| Christiania, 90               |  |
| Antwerp, 152                  |  |
| Leghorn, 250                  |  |
| Arendal, 64                   |  |
| Madras, 32                    |  |
| <b>Potash Salts</b> —         |  |
| Mexico City, £425             |  |
| <b>Potassium Bichromate</b> — |  |
| Bombay, £133                  |  |
| Biogo, 320                    |  |
| Antwerp, 201                  |  |
| Canada, 100                   |  |
| Ghent, 83                     |  |
| U.S.A., 742                   |  |
| Yokohama, 306                 |  |
| <b>Soap</b> —                 |  |
| Algoa Bay, 2 t. 13½ c.        |  |
| E. London, 3 0                |  |
| <b>Sodium Bichromate</b> —    |  |
| Bombay, 2 t. 1¼ c.            |  |
| Canada, 8 ¼                   |  |
| Ghent, 3 2½                   |  |
| U.S.A., 10 19¼                |  |
| <b>Starch</b> —               |  |
| Rio de Janeiro, £28           |  |
| <b>Tallow</b> —               |  |
| Rotterdam, 1 t. 15 c.         |  |
| <b>Treacle</b> —              |  |
| E. London, 2 t. 10 c.         |  |
| Christiania, 25 19            |  |
| Rotterdam, 8 17               |  |
| <b>Varnish</b> —              |  |
| Yokohama, £90                 |  |
| <b>White Lead</b> —           |  |
| Bombay, £60                   |  |
| Rio de Janeiro, 34            |  |
| Calcutta, 32                  |  |
| Montreal, 96                  |  |

**TYNE.**

Week ending February 22nd.

|                           |  |
|---------------------------|--|
| <b>Alkali</b> —           |  |
| Antwerp, 10 t. 2 c.       |  |
| Rotterdam, 6 18           |  |
| Bergen, 3 2               |  |
| Amsterdam, 34 11          |  |
| Venice, 8 3               |  |
| <b>Alum</b> —             |  |
| Seville, 2 t. 1 c.        |  |
| <b>Antimony</b> —         |  |
| Antwerp, 1 t.             |  |
| Hamburg, 1                |  |
| New York, 45              |  |
| Rotterdam, 2 10 c.        |  |
| <b>Arsenic</b> —          |  |
| Venice, 9 t. 7 c.         |  |
| Odense, 18                |  |
| New York, 30 3            |  |
| <b>Barium Binoxide</b> —  |  |
| New York, 10 t. 5 c.      |  |
| <b>Barium Carbonate</b> — |  |
| New York, 100 t.          |  |
| <b>Barytes</b> —          |  |
| Hamburg, 1 bg.            |  |
| New York, 6 c.            |  |
| <b>Bleaching Powder</b> — |  |
| Antwerp, 45 t. 5 c.       |  |
| Venice, 6 0               |  |
| Drontheim, 10             |  |
| Harlingen, 25 5           |  |
| Lisbon, 10 4              |  |
| Amsterdam, 9 17           |  |
| Gothenburg, 20 1          |  |
| <b>Carbolic Acid</b> —    |  |
| Hamburg, 2 glns.          |  |
| Bergen, 2 c.              |  |
| <b>Caustic Soda</b> —     |  |
| Antwerp, 17 t. 9 c.       |  |
| Venice, 29                |  |
| Christiania, 2 18         |  |
| Genoa, 14 10              |  |
| New York, 43 10           |  |
| Rotterdam, 15 1           |  |
| Seville, 37 15            |  |
| Bergen, 2                 |  |
| Lisbon, 4 18              |  |
| Amsterdam, 11 12          |  |
| <b>Dried Blood</b> —      |  |
| Dunkirk, 15 t.            |  |
| <b>Fluor Spar</b> —       |  |
| New York, 8 t. 14 c.      |  |

|                              |  |
|------------------------------|--|
| <b>Litharge</b> —            |  |
| New York, 11 t. 11 c.        |  |
| Amsterdam, 11                |  |
| <b>Magnesia</b> —            |  |
| Hamburg, 16 c.               |  |
| <b>Magnesium Sulphate</b> —  |  |
| Seville, 2 t. 8 c.           |  |
| <b>Manure</b> —              |  |
| Valencia, 207 t.             |  |
| <b>Oxalic Acid</b> —         |  |
| Seville, 6 c.                |  |
| <b>Paint</b> —               |  |
| Odessa, 22 lbs               |  |
| Hamburg, 5 t.                |  |
| Seville, 11 c.               |  |
| <b>Painters' Colours</b> —   |  |
| Antwerp, 1 c.                |  |
| Hamburg, 11                  |  |
| <b>Paraffin Wax</b> —        |  |
| Odessa, 2 t. 11 c.           |  |
| <b>Soap</b> —                |  |
| Hamburg, 1 c.                |  |
| <b>Soda</b> —                |  |
| Aarhus, 4 t. 19 c.           |  |
| Hamburg, 2                   |  |
| Genoa, 12                    |  |
| Venice, 4                    |  |
| Christiania, 10              |  |
| Aalborg, 3 18                |  |
| Drontheim, 6                 |  |
| Ancona, 14 2                 |  |
| Amsterdam, 10                |  |
| <b>Soda Ash</b> —            |  |
| Venice, 35 t. 17 c.          |  |
| Trieste, 7 16                |  |
| Lisbon, 5 3                  |  |
| <b>Sodium Hyposulphite</b> — |  |
| New York, 75 t. 4 c.         |  |
| <b>Sodium Sulphate</b> —     |  |
| Antwerp, 12 c.               |  |
| <b>Sulphur</b> —             |  |
| Christiania, 5 t.            |  |
| <b>Superphosphates</b> —     |  |
| Genoa, 25 t.                 |  |
| Trieste, 20 lbs.             |  |
| Cherbourg, 190 10 c.         |  |
| <b>Turpentine</b> —          |  |
| Hamburg, 2 q.                |  |
| <b>Varnish</b> —             |  |
| Hamburg, 2 c.                |  |

**GOOLE.**

Week ending February 19th.

|                                           |  |
|-------------------------------------------|--|
| <b>Benzol</b> —                           |  |
| Boulogne, 171 cks. 6 t.                   |  |
| <b>Coal Products (otherwise undes.)</b> — |  |
| Boulogne, 4 cks.                          |  |
| Ghent, 1                                  |  |
| Hamburg, 5 5 cs. 2 dms.                   |  |
| Rotterdam, 240                            |  |
| <b>Colours</b> —                          |  |
| Boulogne, 5 cs.                           |  |
| Calais, 3                                 |  |
| Dunkirk, 11 dms.                          |  |
| Ghent, 7 cks.                             |  |
| Harlingen, 20 bgs.                        |  |
| Rotterdam, 8                              |  |
| <b>Dyestuffs (otherwise undescribed)</b>  |  |
| Antwerp, 2 cks. 1 cs.                     |  |
| <b>Manure</b> —                           |  |
| Antwerp, 282 bgs.                         |  |
| Bruges, 192                               |  |
| Dunkirk, 335                              |  |
| Hamburg, 793                              |  |
| <b>Pitch</b> —                            |  |
| Antwerp, 51 t.                            |  |
| <b>Soap</b> —                             |  |
| Ghent, 4 cks.                             |  |

**GRIMSBY.**

Week ending February 22nd.

|                                           |  |
|-------------------------------------------|--|
| <b>Alkali</b> —                           |  |
| Hamburg, 20 cs.                           |  |
| <b>Chemicals (otherwise undescribed)</b>  |  |
| Rotterdam, 26 dms.                        |  |
| <b>Coal Products (otherwise undes.)</b> — |  |
| Dieppe, 194 cks 1 cs.                     |  |
| Hamburg, 3 4 bils.                        |  |
| Rotterdam, 13 pks.                        |  |
| <b>Colours</b> —                          |  |
| Antwerp, 1 cs.                            |  |
| Dieppe, 3 tins                            |  |
| Port au Prince, 38 cks.                   |  |
| <b>Dyestuffs (otherwise undescribed)</b>  |  |
| Dieppe, 3 cs.                             |  |
| <b>Pitch</b> —                            |  |
| Antwerp, 49 t.                            |  |



## PRICES CURRENT.

WEDNESDAY, MARCH 4TH, 1896.

PREPARED BY MESSRS. HIGGINBOTTOM AND CO., 116, PORTLAND STREET, MANCHESTER.

The values stated are F.O.R. at maker's works, or at usual ports of shipment in U.K. The price in different localities may vary.

## Acids:—

|                                            | £                 | s.   | d.         |
|--------------------------------------------|-------------------|------|------------|
| Acetic, 25% and 40% .. .. .                | per cwt.          | 6/   | & 9/-      |
| Glacial .. .. .                            | per lb.           | 10/- |            |
| Arsenic S.G., 2000° .. .. .                | per lb.           | 1    | 2 0        |
| Fluoric .. .. .                            | per lb.           | 0    | 0 3 1/4    |
| Muriatic (Tower Salts), 30° Tw. .. .. .    | per bottle        | 0    | 0 10       |
| " (Cylinder), 30° Tw. .. .. .              | per lb.           | 0    | 3 0        |
| Nitric 80° Tw. .. .. .                     | per lb.           | 0    | 0 1 1/2    |
| Nitrous .. .. .                            | per lb.           | 0    | 0 1 1/4    |
| Oxalic .. .. .                             | net               | 0    | 0 3 1/2    |
| Phosphoric, 1750° .. .. .                  | per ton           | 15   | 10 0       |
| Picric .. .. .                             | per lb.           | 0    | 0 11       |
| Sulphuric (fuming 50%) .. .. .             | per ton           | 15   | 10 0       |
| " (monohydrate) .. .. .                    | per lb.           | 5    | 10 0       |
| " (Pyrites, 168°) .. .. .                  | per lb.           | 3    | 0 0        |
| " 150° .. .. .                             | per lb.           | 1    | 5 0        |
| " (free from arsenic, 145°) .. .. .        | per lb.           | 1    | 7 6        |
| Sulphurous (solution) S.G. 1025 .. .. .    | per lb.           | 3    | 0 0        |
| Tannic (pure) .. .. .                      | per lb.           | 0    | 1 2        |
| Tartaric .. .. .                           | per lb.           | 0    | 1 2 1/2    |
| Arsenic, white powdered .. .. .            | per ton           | 20   | 0 0        |
| Alum (loose lump) .. .. .                  | per lb.           | 4    | 12 6       |
| Alumina Sulphate (pure) .. .. .            | per lb.           | 4    | 12 6       |
| Aluminoferri .. .. .                       | per lb.           | 2    | 7 6        |
| Aluminium .. .. .                          | per lb.           | 0    | 2 10       |
| Ammonia, Anhydrous .. .. .                 | per lb.           | 0    | 1 3        |
| " 880=28° B. .. .. .                       | per lb.           | 0    | 0 2 1/4    |
| " =24° B. .. .. .                          | per lb.           | 0    | 0 2        |
| " Carbonate .. .. .                        | net               | 0    | 0 3 1/4    |
| " Muriate .. .. .                          | per ton           | 22   | 15 0       |
| " (sal-ammoniac) 1st & 2nd .. .. .         | per cwt.          | 39/- | & 37/-     |
| " Nitrate .. .. .                          | per ton           | 37   | 10 0       |
| " Phosphate .. .. .                        | per lb.           | 0    | 0 6 1/4    |
| " Sulphate (grey) London .. .. .           | per ton           | 8    | 10 0       |
| " (grey) Hull .. .. .                      | per lb.           | 8    | 8 9        |
| Aniline Oil (pure) .. .. .                 | per lb.           | 0    | 0 7 1/4    |
| Aniline Salt .. .. .                       | per lb.           | 0    | 0 7        |
| Antimony .. .. .                           | per ton           | 29   | 15 0       |
| " (tartar emetic) .. .. .                  | per lb.           | 0    | 0 8 1/2    |
| " (golden sulphide) .. .. .                | per lb.           | 0    | 0 10       |
| Barium Chloride .. .. .                    | per ton           | 6    | 7 6        |
| " Carbonate (native) .. .. .               | per lb.           | 3    | 10 0       |
| " Sulphate (native levigated) .. .. .      | per lb.           | 42   | 6 10 6 1/2 |
| Bleaching Powder, 35% .. .. .              | net               | 7    | 0 0        |
| " Liquor, 7% .. .. .                       | per lb.           | 3    | 10 0       |
| Bisulphide of Carbon .. .. .               | per lb.           | 12   | 10 0       |
| Chromium Acetate (crystal) .. .. .         | per lb.           | 0    | 0 6        |
| Calcium Chloride .. .. .                   | per ton           | 2    | 2 6        |
| China Clay (at Runcorn) in bulk .. .. .    | per ton           | 15/- | to 30/-    |
| <b>Coal Tar Products and Dyes:—</b>        |                   |      |            |
| Alizarine (artificial) 20% .. .. .         | net per lb.       | 0    | 0 7 1/4    |
| Magenta .. .. .                            | per lb.           | 0    | 3 9        |
| Anthracene, 30% A, f.o.b. London .. .. .   | per unit per cwt. | 0    | 0 11 1/2   |
| Benzol, 90% .. .. .                        | per gallon        | 0    | 2 0        |
| " 50/90 .. .. .                            | per lb.           | 0    | 1 8        |
| Carbolic Acid (crystallised 40°) .. .. .   | per lb.           | 0    | 0 8 1/2    |
| " (crude 60°) .. .. .                      | per gallon        | 0    | 2 3        |
| Creosote (ordinary) .. .. .                | per lb.           | 0    | 0 1 1/4    |
| " (filtered for Lucigen light) .. .. .     | per lb.           | 0    | 0 1 1/4    |
| Crude Naphtha 30% @ 120° C. .. .. .        | per lb.           | 0    | 0 10       |
| Grease Oils, 22° Tw. .. .. .               | per ton           | 2    | 10 0       |
| Pitch, f.o.b. Liverpool or Garston .. .. . | per ton           | 1    | 13 0       |
| Solvent Naphtha, 90% at 160° .. .. .       | per gallon        | 0    | 1 6        |
| " Lucigen" and "Wells" Oils .. .. .        | per lb.           | 0    | 0 2 1/2    |
| Copper .. .. .                             | per ton           | 45   | 15 0       |
| " Sulphate .. .. .                         | per lb.           | 19   | 10 0       |
| " Oxide (copper scales) .. .. .            | per lb.           | 41   | 10 0       |
| Glycerine (crude) .. .. .                  | per lb.           | 37   | 12 0       |
| " (distilled S.G. 1250°) .. .. .           | per lb.           | 75   | 0 0        |
| Iodine .. .. .                             | net, per oz.      | 0    | 0 9        |
| Iron Sulphate (copperas) .. .. .           | per ton           | 1    | 5 0        |
| " Sulphide (antimony siag) .. .. .         | per lb.           | 2    | 0 0        |
| Lead (sheet) for cash .. .. .              | per lb.           | 12   | 15 0       |
| " Litharge Flake (ex ship) .. .. .         | per lb.           | 14   | 10 0       |
| " Acetate (white) .. .. .                  | per lb.           | 21   | 10 0       |
| " brown .. .. .                            | per lb.           | 16   | 0 0        |
| " Carbonate (white lead) pure .. .. .      | per lb.           | 16   | 0 0        |
| " Nitrate .. .. .                          | per lb.           | 19   | 0 0        |

|                                                   | £            | s. | d.      |
|---------------------------------------------------|--------------|----|---------|
| Lime, Acetate (brown) (ex ship) .. .. .           | per ton      | 4  | 15 0    |
| " (grey) (ex ship) .. .. .                        | per ton      | 7  | 10 0    |
| Magnesium (ribbon and wire) .. .. .               | per oz.      | 0  | 2 0     |
| " Chloride (ex ship) .. .. .                      | per ton      | 2  | 7 0     |
| " Carbonate .. .. .                               | per cwt.     | 1  | 17 0    |
| " Hydrate .. .. .                                 | per ton      | 17 | 0 0     |
| " Sulphate (Epsom Salts) .. .. .                  | per ton      | 2  | 15 0    |
| Manganese, Sulphate .. .. .                       | per cwt.     | 16 | 10 0    |
| " Borate .. .. .                                  | per cwt.     | 2  | 15 0    |
| " Ore, 70% .. .. .                                | per ton      | 3  | 10 0    |
| Methylated Spirit, 61° O.P. .. .. .               | per gallon   | 0  | 1 0     |
| Naphtha (Wood), Solvent .. .. .                   | per ton      | 0  | 3 0     |
| " Miscible, 60° O.P. .. .. .                      | per ton      | 0  | 0 0     |
| <b>Oils:—</b>                                     |              |    |         |
| Cotton-seed .. .. .                               | per ton      | 17 | 10 0    |
| Linseed .. .. .                                   | per ton      | 20 | 15 0    |
| Petroleum, American .. .. .                       | per gallon   | 0  | 0 0     |
| Stearine .. .. .                                  | per ton      | 24 | 0 0     |
| Phosphorus (yellow) .. .. .                       | per lb.      | 0  | 2 2 1/2 |
| " (red) .. .. .                                   | per lb.      | 0  | 2 8     |
| Potassium (metal) .. .. .                         | per oz.      | 0  | 3 7     |
| " Bichromate .. .. .                              | per lb.      | 0  | 0 4 1/4 |
| " Carbonate, 90% (ex ship) .. .. .                | per ton      | 17 | 5 0     |
| " Chlorate .. .. .                                | per lb.      | 0  | 0 4 1/4 |
| " Cyanide, 98% .. .. .                            | per lb.      | 0  | 1 2 1/2 |
| " Hydrate (Caustic Potash) 90% .. .. .            | per ton      | 24 | 10 0    |
| " (Caustic Potash) 75/80% .. .. .                 | per ton      | 20 | 10 0    |
| " (Caustic Potash) 70/75% .. .. .                 | per ton      | 19 | 10 0    |
| " Nitrate (refined) .. .. .                       | per cwt.     | 1  | 1 6     |
| " Permanganate .. .. .                            | per cwt.     | 3  | 7 6     |
| " Prussiate Yellow .. .. .                        | per lb.      | 0  | 0 7 1/2 |
| " Sulphate, 90% (ex ship) .. .. .                 | per ton      | 9  | 15 0    |
| " Muriate, 80% (do.) .. .. .                      | per ton      | 8  | 10 0    |
| Silver (metal) .. .. .                            | per oz.      | 0  | 2 7 1/2 |
| " Nitrate .. .. .                                 | per lb.      | 0  | 2 0     |
| Sodium (metal) .. .. .                            | per lb.      | 0  | 2 1     |
| " Carb. (refined Soda-ash) 48% .. .. .            | net per ton  | 4  | 15 0    |
| " (Caustic Soda-ash) 48% .. .. .                  | per lb.      | 4  | 5 0     |
| " (Carb. Soda-ash) 48% .. .. .                    | per lb.      | 4  | 0 0     |
| " (Alkali) 58% .. .. .                            | per lb.      | 3  | 15 0    |
| " (Soda Crystals) .. .. .                         | per lb.      | 2  | 2 0     |
| " Acetate (ex-ship) .. .. .                       | per lb.      | 14 | 10 0    |
| " Arseniate, 45% .. .. .                          | per lb.      | 13 | 10 0    |
| " Chlorate .. .. .                                | per lb.      | 0  | 0 6 1/2 |
| " Borate (Borax) .. .. .                          | net, per ton | 19 | 10 0    |
| " Bichromate .. .. .                              | per lb.      | 0  | 0 3 1/4 |
| " Hydrate (77% Caustic Soda) (f.o.b.) net pr. ton | per ton      | 9  | 7 6     |
| " (74% Caustic Soda) .. .. .                      | per ton      | 8  | 10 0    |
| " (70% Caustic Soda) .. .. .                      | per ton      | 7  | 10 0    |
| " (60% Caustic Soda) .. .. .                      | per ton      | 6  | 10 0    |
| " (60% Caustic Soda, cream) (f.o.b.) .. .. .      | per ton      | 6  | 7 6     |
| " Bicarbonate .. .. .                             | per lb.      | 6  | 10 0    |
| " Hyposulphite .. .. .                            | per lb.      | 6  | 10 0    |
| " Manganate, 30% .. .. .                          | per lb.      | 16 | 0 0     |
| " Nitrate (95%) ex-ship Liverpool .. .. .         | per cwt.     | 0  | 8 3     |
| " Nitrite, 98% .. .. .                            | per ton      | 30 | 0 0     |
| " Phosphate .. .. .                               | per lb.      | 13 | 5 0     |
| " Silicate (glass) .. .. .                        | per ton      | 4  | 10 0    |
| " (liquid, 100° Tw.) .. .. .                      | per lb.      | 3  | 10 0    |
| " Stannate, 40% .. .. .                           | per cwt.     | 3  | 2 9     |
| " Sulphate (Salt-cake) .. .. .                    | per ton      | 1  | 7 6     |
| " (Glauber's Salts) .. .. .                       | per lb.      | 1  | 10 0    |
| " Sulphide .. .. .                                | per lb.      | 7  | 15 0    |
| " Sulphite .. .. .                                | per lb.      | 5  | 5 0     |
| Strontium Hydrate, 100% .. .. .                   | per lb.      | 8  | 10 0    |
| Sulphocyanide Ammonium, 95% .. .. .               | per lb.      | 0  | 0 6 1/4 |
| " Barium, 95% .. .. .                             | per lb.      | 0  | 0 4 1/4 |
| " Potassium .. .. .                               | per lb.      | 0  | 0 7     |
| Sulphur (Flowers) .. .. .                         | per ton      | 6  | 15 0    |
| " (Roll Brimstone) .. .. .                        | per lb.      | 5  | 0 0     |
| " Brimstone: Best Quality .. .. .                 | per lb.      | 3  | 12 6    |
| Superphosphate of Lime (26%) .. .. .              | per lb.      | 2  | 7 6     |
| Tallow .. .. .                                    | per lb.      | 21 | 10 0    |
| Tin Crystals .. .. .                              | per lb.      | 0  | 0 5 1/2 |
| " English Ingots .. .. .                          | per ton      | 64 | 10 0    |
| Zinc (Spelter) .. .. .                            | per lb.      | 15 | 0 0     |
| " Chloride (solution, 100° Tw.) .. .. .           | per lb.      | 5  | 2 6     |



# THE CHEMICAL TRADE JOURNAL AND OIL, PAINT and COLOUR REVIEW.

Publishing Offices: 32, BLACKFRIARS STREET, MANCHESTER.

No. 460.

SATURDAY, MARCH 14, 1896.

Vol. XVIII.

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## Notices.

All communications for the *Chemical Trade Journal* should be addressed, and Cheques and Post Office Orders made payable to—

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The Terms of Subscription, commencing at any date, to the *Chemical Trade Journal*,—payable in advance,—including postage to any part of the world, are as follows:—

Yearly (52 numbers) ..... 12s. 6d.

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10 Words and under ..... 1s. 6d. per insertion  
Each additional 10 words ..... 3s. 3d.

Advertisements intended for insertion in the current week's issue should reach the office by **Thursday morning** at the latest.

## CURRENT TOPICS.

### THE NITRATE COMBINATION.

THE long-looked for is at last accomplished, and the combination of nitrate producers has been consummated.

The terms are to apply for three years from the 1st of April, subject to certain modifications of details; thus the total shipments for the year, April 1st, 1896, to March 31st, 1897, to all countries are to be limited to 1,080,000 tons. It is quite possible that this total may be altered for the next year, as if the demand increases sufficiently to enable the price to reach 6s. per quintal at Chili, the production will be increased.

There is thus no prospect of a return to prices on the same level as was ruling in 1893, since the statistics for the past five years show that the present limit of production is about 57,000 tons in excess of the highest total consumption ever reached.

In estimating the probable outcome of the combine, it is not enough to note the decided increase in the consumption last year, as there can be no doubt that the increase in the consumption was mainly due to the excessive cheapness of nitrate. The figures since 1891 show very clearly that 1895, the year with the largest consumption, was the year of lowest prices; while in 1893, the period of very high prices, the consumption fell to 884,000 tons, the lowest total there has been in recent years.

It is probable that the price will not be advanced higher than 8s. 6d. per cwt., but, judging from past experience, there is good reason to expect that even this advance will tend to check the consumption on the Continent, while in this country its use has steadily declined in spite of the fact that nitrate was selling last autumn at 7s. 3d. per cwt. These facts would seem to indicate that there is no great likelihood of the last part of the agreement being called into play in 1897-8, since, should the demand for the growth of sugar-beets be increased in the manner expected, it is highly probable that the increase will only counterbalance the deficiencies at other points.

On the other hand, it is a great advantage for producers to know that the price will remain fairly constant for three years, and to be freed from undue competition by the distribution and regulation of the output. Such conditions will make a great difference to the smaller companies, while the larger concerns will enjoy the dual advantage of working profitably and conserving their resources.

### SEWAGE FILTRATION.

The question of land filtration as opposed to artificial methods has long been a vexed question, and, as has frequently been pointed out, land filtration is undoubtedly an excellent system under suitable conditions. But in the discussion of this question the advocates of land filtration seem to have lost sight entirely of the all-



important influences of circumstances. Because the land system is undoubtedly good they appear to insist upon its adoption, regardless of the fact that Utopian methods are not always the best.

The merits and demerits of a process do not lie so much in its intrinsic features as in general applicability and the advisability of adapting those features to ordinary existing circumstances. It is on these grounds that methods of artificial filtration demand consideration. Wherever land filtration is feasible, adopt it by all means. In the case of large towns, however, in the majority of cases suitable land is not available, and if it is the price is prohibitive.

The Local Government Board, by their present system, set a premium on the inefficient filtration of sewage effluents, and how much depends on this stage, as contrasted with the mere precipitation, only those who reside near the Ship Canal can fully appreciate. It is therefore pleasing to find this conviction coming home to those who make comparative observations of methods of sewage treatment. Dr. J. Haddon has felt compelled to express himself in print, and whatever his personal views may be, his words afford additional testimony to the fact that the unqualified enforcement of land filtration pure and simple is being carried too far, and that it is high time our mentors began to inform themselves upon both sides of this most important question.

## SOCIETY OF CHEMICAL INDUSTRY.

### MANCHESTER SECTION.

THE fifth meeting of this section was held on the 6th inst., at the rooms of the Chemical Club, Victoria Hotel, the chairman, Mr. Geo. E. Davis presiding.

A paper was read by Dr. Stevenson Macadam (Edinburgh), on "Destructors for Consuming Town Refuse: Their requirements, defects, and modes of improvement." After briefly explaining the reason of his appearance before the section, the author reviewed the various methods of dealing with the refuse, which he was of the opinion did not differ materially in various towns. The conditions he considered it necessary for an efficient destructor to fulfil were:—1st, to burn the inflammable portions into an innocuous gas; 2nd, to give good cinders, which would burn without allowing bad gases to escape; 3rd, to yield a good glassy clinker suitable for cement making and kindred purposes. He then described the construction of the five leading types of destructors, including Fryer's, Horsfall's, Meldrum's, Beeman and Deas's, and the Leeds District patterns. He emphasised the advantages and disadvantages peculiar to each, owing to the lack of forced draught arrangements or insufficient size of grate to burn up the gases. He was not in favour of cremators. He himself had as yet never actually seen one at work, the fires always being out. He considered an efficient destructor should do its own work, and not need the aid of a cremator. The doctor then proceeded to describe what he considered would be an ideal destructor. Where the cells worked separately there was no depending on the total absence of smell, but two cells or more would give good results, and he described such an arrangement, in which all the gases from the "stewing" stage were passed through the cell in the "cinder" stage before passing to the flue. He maintained that the failure of many destructors was due to unintelligent working, and that all destructors ought to be worked by, or be under the supervision of, a capable workman. With regard to the great nuisance experienced by the escape of dust up the chimney, he urged the careful removal of the clinker and that only. He did not think rocking bars an advantage. The gases on their passage to the chimney, if passed through a chamber having an area about four times that of the flue, deposited practically the whole of the dust, and this way he had found to be the only efficacious method of treatment. The dust from the destructors, examined microscopically, could always be recognised, and it was extremely light.

In the discussion that followed, the Chairman referred to his own experience with cupola dust, and the dust from McDougall's pyrites burner, which he had found to be of the same vesicular nature as the dust from the destructors.—Mr. Thompson (Manchester) asked for further information about the dust settling chamber, since such a small chamber effected such a large reduction in the rate of the flow of the gases. He certainly thought destructors should be so designed as to utilise the heat generated.—Mr. Stenhouse (Rochdale) pointed out

one or two things which he thought were against the method by the process. From his own experience he was inclined to think that necessitated great care in working was objectionable suggested a modified dust chamber.—Mr. Corbett (Salford) his experience with destructors. He emphasised the low temperature that were frequently attained, having by actual experiment for case that the flue gases would not evaporate water.—Mr. Syke referred to the Heeley destructor, illustrating his description on blackboard. He was in favour of rocking bars.—Mr. Flintoff (Rochdale) said he obtained a temperature of 2,000° F. he was adverse to anything that meant complication and skill in construction.—Mr. Hall (Salford) and Mr. Deas (Warrington) also took part in discussion.—After a few remarks from the Chairman, Dr. Macadam briefly replied. His scheme, he said, was as yet only on paper, and was not intended for a meeting, which terminated with the usual votes of thanks, and the fullest this session, being largely attended by a number of men interested in the subject of the paper. Mr. Thomas T. Flintoff (president of the society) was also present.

The reading of Mr. Flintoff's paper on "The functions of a fixing agent for pigments on cotton" was adjourned to the next meeting.

### LIVERPOOL SECTION.

The Liverpool section met at the Chemical Laboratory, University College on Wednesday, 4th inst., under the presidency of Dr. Schack-Sommer. The Chairman read a communication to the Sorghum sugar industry of Spain. Dr. Kohn exhibited a series of lantern slides some interesting results recently obtained through the agency of the much-discussed Röntgen rays. An interesting paper was subsequently read by Mr. E. H. Saniter on his preliminary analysis of chrome-ore and ferro-chrome. The efficiency and exceeding rapidity of the processes were shown by Mr. Saniter, who gave the details practically, before his audience, during the reading of the paper.

At the next meeting, to be held on April 1st, Mr. James I. recently returned from Sweden, will give an account of the cellulose industry of Scandinavia.

### NOTTINGHAM SECTION.

A well attended meeting of the local section was held on Wednesday evening, the 4th March, at the University College, Nottingham, amongst those present being Dr. Clowes, Dr. Sudborough, Caven, Forth, Golding, Jackson, Pentecost, Ward, and other Derby members were represented by Messrs. Carulla and C. C.E.—Mr. Ward (acting for the hon. sec.) read the minutes of the previous meeting, which was held in Derby, after which the Chairman (Mr. Carulla) explained that imperative business had called him away to London that day, but he had provided a short paper on "An evaporation test for cylinder oils," which was read at the meeting. The test consists in taking a weighed quantity of cylinder oil and observing the loss of weight caused by the current of air or steam over it in an appropriate apparatus. The author finds that this test gives a more useful (quantitative) result than the merely qualitative test of the flashing point with certain trouble. The Chairman said that in the absence of the author he was courteous not to discuss the subject, and especially as a full paper was promised for the May meeting, which could come well prepared after what they had heard.

The recent paper by Mr. R. M. Caven on "Some Properties of Ferric Phosphate," set down for discussion, was then recapitulated by the author.—Dr. Clowes said he hoped the plan of reading a paper and discussing it at a subsequent one might be frequently adopted, as it had obvious advantages. This resolution has some influence on our present analytical tables, which certainly have to be modified; and he wished to put it on record that there was much original work to which, in his modesty, he did not lay claim to in the paper. Mr. Caven, however, had not trodden on the fringe of the subject, and he (Dr. Clowes) thought the author might find time to continue his investigations.—Mr. Caven, in his reply, admitted that it would have been better, as Dr. Clowes suggested, to have used only the term " $\text{PO}_4$  radicle" throughout. He went over the various points raised, as to the colour in solutions by the presence of  $\text{FeCl}_3$ , and the subject of analytical solutions. He also replied to the question of Mr. Wilkinson about no precipitation occurring after the addition of ammonia in a solution of ferric phosphate, containing a salt of zinc, and to another of Mr. Forth regarding the quality of the ferric phosphate employed, which was

Time still remaining, Dr. F. Clowes very kindly offered a paper on "The estimation of oxygen by an alkaline solution of pyrogallol," which the meeting gladly received. Dr. Clowes said that exact had been regarded by some people as unmixed evils, but at least one case in which good had resulted from the



time ago samples of commercial oxygen were given out for analysis at an examination, when all the students returned them as containing carbonic oxide, which was not present in the samples. On investigating the subject it was found that in a mixture of gases, when tested by pyrogallic acid under certain conditions, if oxygen largely preponderates carbonic oxide is evolved from the re-agent. Dr. Clowes acknowledged his indebtedness to Mr. Jackson for assistance in carrying out these experiments. Messrs. Caven and Ward joined in the discussion of the paper, the Chairman remarking that he was pleased to infer from what had been said by Dr. Clowes that the error was not present in the test of the exit gases from sulphuric acid chambers, in which oxygen was present in only a small proportion, and with which he (the chairman) was interested. It was announced that the next meeting will take place in Derby, early in April, when Mr. John White, F.I.C., will read a paper on "Filtration and domestic filters." It was also announced that on Thursday, March 26th, at 8 p.m., Professor Ramsay will give a lecture at University College, Nottingham, on the newly-discovered gases, Argon and Helium. The meeting then terminated.

### MOLASSES POTASH FOR SOAP-MAKING.

A CONSIDERABLE quantity of potash is obtained from the alkaline salts of the sugar beet, which are left in the molasses after the separation of the sugar, in the course of the manufacture of this latter product. After converting the molasses into spirit, the residue is concentrated and carbonized, yielding a crude potash of the following average composition:—

|                    |                        |
|--------------------|------------------------|
| 24 to 50 per cent. | carbonate of potash.   |
| 17 to 26 "         | carbonate of soda.     |
| 16 to 21 "         | chloride of potassium. |
| 3 to 13 "          | sulphate of potassium. |
| 14 to 22 "         | insoluble matter.      |

In this condition the potash is unsuitable for soft soap manufacture, on account of the quantity of soda present; but on the removal of the latter, by the aid of extraction with water and repeated recrystallization, a refined potash is obtained suitable for the manufacture of soft soap in the summer. Its constitution is then as follows:—

|                    |                        |
|--------------------|------------------------|
| 80 to 91 per cent. | carbonate of potash.   |
| 2 to 5 "           | carbonate of soda.     |
| 1 to 3 "           | chloride of potassium. |
| 1 to 3 "           | sulphate of potassium. |
| 1 to 10 "          | water.                 |

For natural grain soaps this potash contains too large a quantity of soda for the production of a good grain, and for soft soaps it should only be employed in summer or warm weather, the soda rendering the soap liable to harden in the cold season of the year. On the other hand, in summer it is not necessary, as is the case when working with 98 per cent. mineral potash, to add soda lye in order to obtain a soap that will resist the summer temperature—that is, provided the oil used contains a little stearine. When, however, a pure linseed oil soft soap is to be made with molasses potash an addition of soda lye will be requisite to give the necessary consistency. The process is performed as follows:—According as the soap is to be ground with carbonate or other salt solution, or to be filled with potato flour, the potash is mixed with 45 to 55 per cent. of lime to form a 33° Bé. lye. The first extract of 30° Bé. strength is run into a special vessel, and the strong slaked lime is mixed with a 4° to 6° Bé. potash lye, which should be well crutched in, so that no trace of deposited lime remains undissolved. In the absence of potash lye water may be used. The resulting lye, after the lime has settled down—which will require between five and twelve hours—is of 18° to 22° Bé., and this is run into the first extract until the mixture indicates about 24° to 25° Bé. A sufficient quantity of this being placed in the copper and raised to boiling heat, the oleine is gradually added, and if the boiling has been properly carried out the stock soap may be regarded as finished. Any rosin that is to be used as filling should be now added, broken up into small pieces, and left overnight to dissolve, without any fire, but with the furnace door and damper closed, and by the morning will be ready for the fitting lye, which consists of the necessary amount of 30° Bé. extract. Soap prepared in this manner will yield well, and form a stable and clear stock soap, and when filled or ground will, provided these operations are carried out properly, with the right proportions of potato flour or salt, give a clear and bright soft soap.

Molasses potash is also suitable for ammonia and turpentine, clear elain, or silver soap in summer, on account of its containing the amount of soda necessary to the production of these soaps. The use of this potash likewise influences the yield of the product. It is well known that the addition of soda lye, although necessary to impart consistency and structure to the soft soaps, causes a decreased yield; and, though

at first sight the presence of soda in molasses potash might be considered disadvantageous, it is found that the associated potassium chloride counteracts the tendency referred to.

Although in the cold season the soda in molasses potash causes soft soap prepared by its aid to solidify too readily, this objection does not hold good in the case of the other soaps mentioned above, the soda and potassium chloride present being indispensable to their production.

A word of caution to buyers of such potash and soda, either as caustic or carbonate, may not be out of place. It is to be careful to get a guarantee from the vender, of the percentage composition of the articles. The adoption of this precaution may save a deal of trouble and dissatisfaction, often incurred without any redress. For instance, an impure potash will sometimes contain as much as 39 per cent. of soda and only about the same amount of potash, such a mixture being eminently unsuitable for the manufacture of soft soap, and calculated to cause the party using it, without knowledge of its composition, to spoil a whole batch of soap without any chance of making a claim for damages—a condition of things a guarantee would entirely obviate.

### EXPORTS OF ALKALI AND BLEACH.

THE following returns, which are taken from the official foreign and colonial statistics of the United Kingdom, give the amount and value of alkali and bleaching materials shipped to the undermentioned countries for month ending January 31, 1896, as compared with 1895:—

#### ALKALI.

| Port.                    | 1895.   | 1896.   | 1895.   | 1896.   |
|--------------------------|---------|---------|---------|---------|
|                          | Cwts.   | Cwts.   | £       | £       |
| Russia .....             | 3,977   | 7,894   | 1,492   | 2,687   |
| Sweden and Norway ....   | 8,284   | 7,539   | 2,052   | 1,633   |
| Germany .....            | 3,665   | 12,190  | 1,277   | 3,361   |
| Holland .....            | 10,526  | 11,680  | 1,228   | 2,049   |
| France .....             | 1,874   | 2,114   | 642     | 708     |
| Spain and Canaries ..... | 20,825  | 27,778  | 7,113   | 9,626   |
| Italy .....              | 21,098  | 17,838  | 6,275   | 5,045   |
| United States .....      | 319,317 | 261,767 | 67,898  | 52,575  |
| Australasia .....        | 9,910   | 17,642  | 3,429   | 5,366   |
| British North America .. | 4,175   | 11,049  | 1,191   | 2,996   |
| Other countries .....    | 96,854  | 91,976  | 27,771  | 25,147  |
| Total .....              | 500,505 | 469,467 | 120,368 | 111,193 |

#### BLEACHING POWDER, ETC.

| Port.                 | 1895.  | 1896.   | 1895.  | 1896.  |
|-----------------------|--------|---------|--------|--------|
|                       | Cwts.  | Cwts.   | £      | £      |
| United States .....   | 68,919 | 86,270  | 25,357 | 31,441 |
| Other countries ..... | 24,334 | 30,209  | 8,917  | 10,753 |
| Total .....           | 93,253 | 116,479 | 34,274 | 42,194 |

THE SALFORD TECHNICAL SCHOOL.—We learn that the warming and ventilating of the new building has been carried out by the Blackman Ventilating Company, Limited, on lines known as the "Blackman Twin Dual System."

ILLEGAL SALE OF ARSENIC.—At Chester, last week, Messrs. Dicksons, Limited, seedsmen, were summoned by the Pharmaceutical Society for selling a tin of weed-killer containing arsenic, in contravention of the Pharmacy Act, the object of which is to protect the public against the sale of poisons by other than qualified persons. A society's agent purchased the weed-killer, which, analysis proved, contained two pounds of arsenic, enough to kill seven thousand persons. A fine of 20s. with costs of court was imposed.

TRANSIT OF LIQUIDS BY POST.—At a recent meeting of the Chemical Trade Section of the London Chamber of Commerce attention was drawn to the restrictions placed upon the chemical industry in the United Kingdom by the regulation of the British Post-office forbidding the sending of liquids in bottles. This barrier to the transmission of samples of liquids by post was held to be a cause of serious injury to the trade in chemicals. It was stated that from other European countries, not including Italy, however, sample bottles of liquids could be sent by post to India, the United States, and other parts of the world, and this facility was an obvious advantage to manufacturers on the Continent. It was resolved that an effort should be made to obtain the same privilege in the United Kingdom, and a committee was appointed to make representations to the Postmaster-General, with a view to a removal of the disability under which manufacturers and merchants now carry on business in this country.



## KESTNER'S ACID ELEVATORS.

THE elevation of acids is always a troublesome matter, and the use of compressed air has long been used in conjunction with the "acid egg." The elevator that we are about to describe is a great advance on the old-fashioned egg. The advantage of automatically feeding the Glover from the chambers is great, apart from the concurrent economies in labour and compressed air. For this purpose only one type of the apparatus is made, which is capable of raising 100 to 300 gallons of acid per hour. Three elevators are generally sufficient for one set of chambers, though a fourth is sometimes provided as a reserve. Special elevators on this principle are also made for hydrochloric acid.

The apparatus is composed essentially of a cast-iron body **B** (which, when employed for weak acids, must be lined internally with lead) and of a box **D** (shown open) connected with the body **B** by a vertical pipe **T**. The apparatus receives its feed by the pipe **T<sub>2</sub>**, which is provided with a stop-valve **M**. The discharge pipe **T<sub>1</sub>** is formed by a branch from the feed pipe **T<sub>2</sub>**.

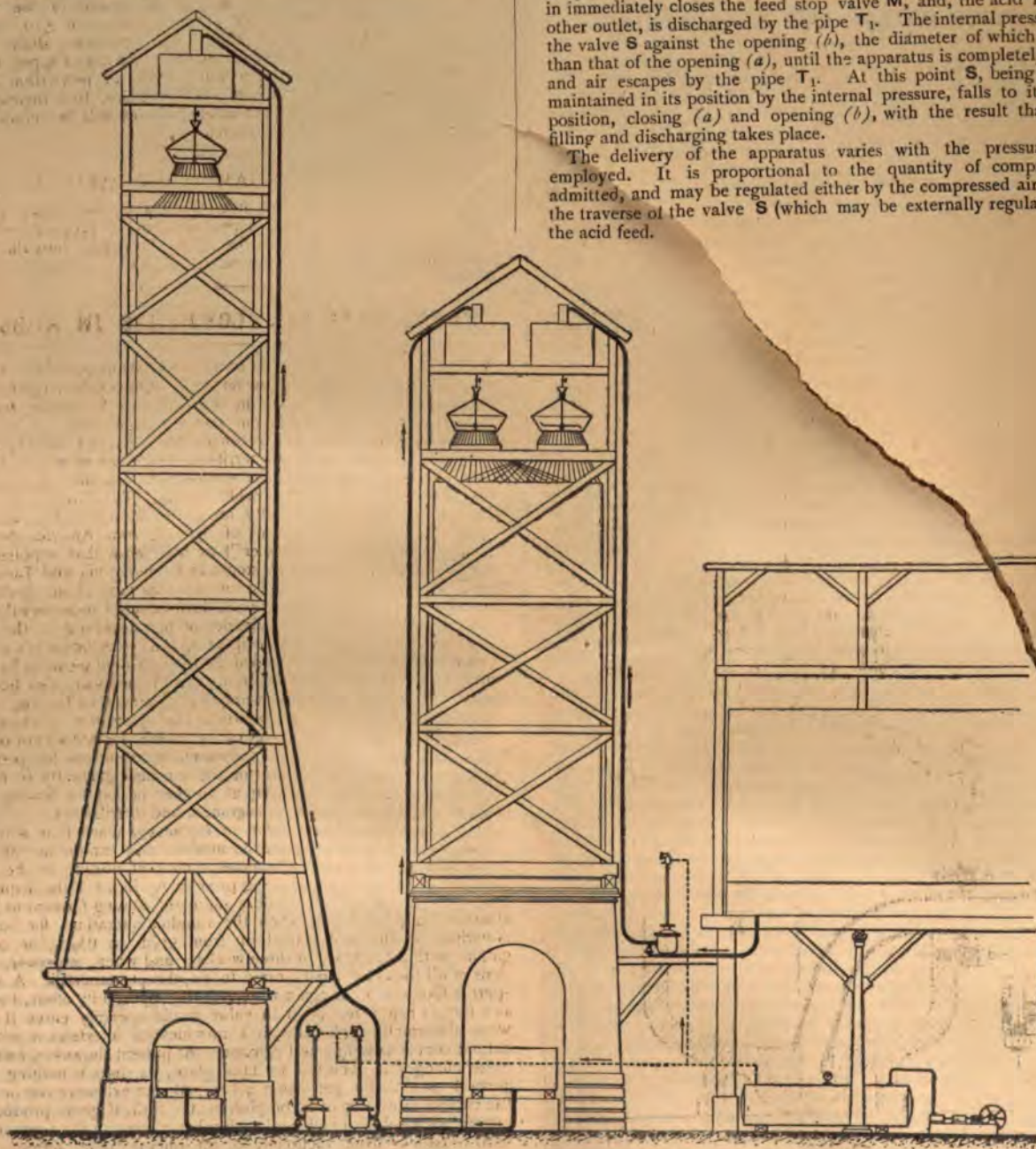
The box **D** contains a valve **S**, which alternately opens and closes the inlet (*a*) and the exit (*b*) for the compressed air. The movement of this valve is effected by a counterpoised float consisting of a cylindrical lead body **XY**, filled with acid and situated in the cylindrical space in the upper part of the body of the apparatus. The float **XY** is connected to the valve by a rod (*c*) placed in the pipe **T**, and is balanced externally by a counterpoise **P**, so that the effective weight of **XY** is the weight of the liquid which it displaces.

**GF** represents the highest level allowable in the reservoir from which the elevator is fed. If this precaution be observed it is impossible for the acid ever to come into contact with the valve or other arrangement in the box **D**.

## MODE OF WORKING.

The apparatus works by pulsations in two periods—a feeding period, during which it is filling with acid through the pipe **T<sub>2</sub>**, and a discharging period, during which it is emptying itself by the pipe **T<sub>1</sub>**. During the first period the weight **XY**, acting upon the valve **S**, closes the air inlet (*a*) and opens the outlet (*b*). As soon as the apparatus is filled, the weight of **XY** becoming *nil*, the action of **P** causes the valve to open the inlet (*a*) and close the outlet (*b*). The compressed air rushing in immediately closes the feed stop valve **M**, and, the acid finding no other outlet, is discharged by the pipe **T<sub>1</sub>**. The internal pressure holds the valve **S** against the opening (*b*), the diameter of which is greater than that of the opening (*a*), until the apparatus is completely emptied and air escapes by the pipe **T<sub>1</sub>**. At this point **S**, being no longer maintained in its position by the internal pressure, falls to its original position, closing (*a*) and opening (*b*), with the result that another filling and discharging takes place.

The delivery of the apparatus varies with the pressure of air employed. It is proportional to the quantity of compressed air admitted, and may be regulated either by the compressed air tap or by the traverse of the valve **S** (which may be externally regulated) or by the acid feed.



KESTNER'S ACID ELEVATOR, FEEDING GAY LUSSAC AND GLOVER TOWERS AUTOMATICALLY.



## Reports of Companies.

### LEVER BROTHERS, LIMITED.

The directors of Lever Brothers, Ltd., in their report for the year ended Dec. 31st last, state that the balance standing to the credit of profit and loss account (£207,369.) has been appropriated as follows:—Dividends on preference shares at the rate of 5 per cent. per annum and on ordinary shares at the rate of 10 per cent. per annum; bonus to customers, £39,883.; carried to reserve fund, £30,000.; balance carried forward to next account, £24,985. The above dividends on the preference and ordinary shares were paid on July 1st, 1895, and January 1st, 1896. The bonus to customers was paid on August 1st, 1895, and February 1st, 1896. The business has continued to increase in all departments, and it has been found necessary to extend the producing power of the works. To meet the growth of the business it is proposed to increase the capital, and, accordingly, resolutions were submitted to meetings held at the conclusion of the ordinary meeting for the creation of 25,000 preference shares of £10. each and 25,000 ordinary shares of £10. each. The preference shares will be offered to the holders of preference shares whose names appear upon the register of members on March 24th, 1896, in proportion to their existing holdings, at a premium of £1. per share, thus increasing the reserve fund by £25,000. The ordinary shares will be subscribed for by existing holders of ordinary shares.

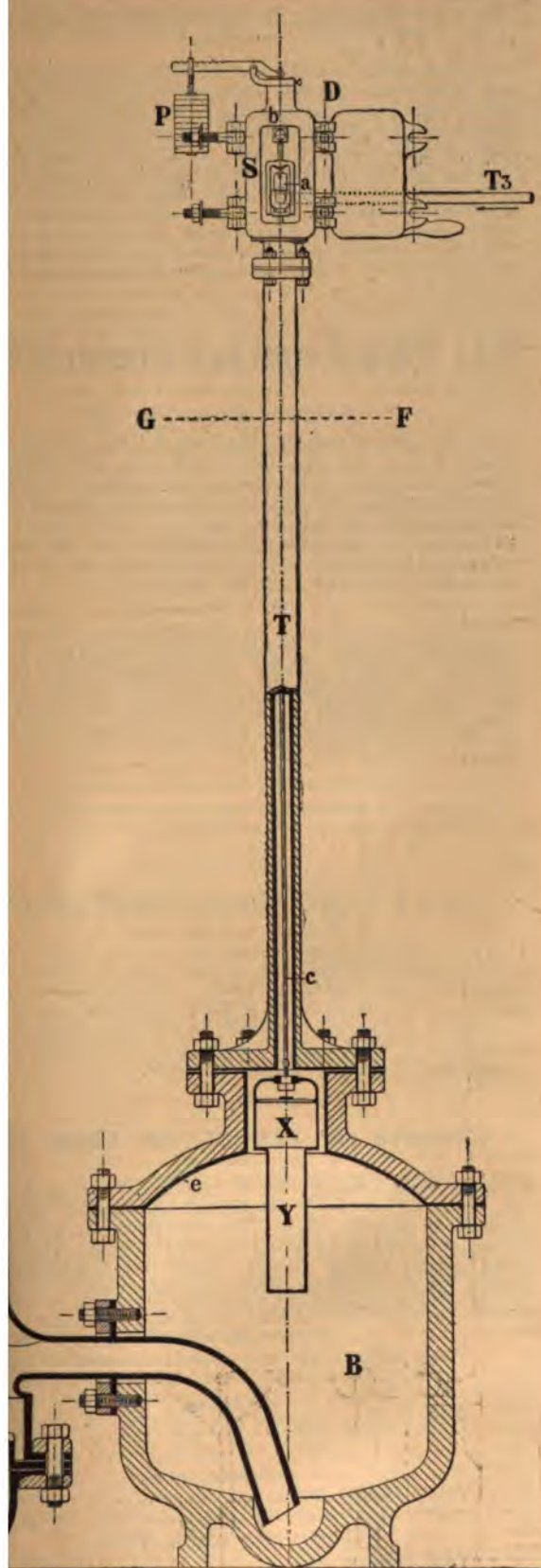
### NOBEL DYNAMITE COMPANY.

Advice has been received from Vienna to the effect that the directors have resolved, as in the previous year, to propose a dividend of 25 per cent., after writing off 600,000fl. and paying into the reserve fund the amount required by statute.

### PETROLEUM DEVELOPMENTS IN RUSSIA.

ADVICES from Russia point to an enormous increase in production not only in old, but in new territory. One of the largest naphtha springs that has been known in the Caucasus for many years has lately been struck, spouting about 500 feet high, and flowing at the rate of a million pounds (20,000 tons) a day. Large natural lakes have been formed, and in the Terek territory, where the oil was discovered, dams have been erected in the valleys to retain the oil, which will prove a great addition to the world's supply. The Grosnia oil fields, which are situated in the vicinity, are in the south of Russia, and their importance rival the oil regions of Baku. From America (says the "British and Colonial Importer") we also learn that supplies have materially augmented, and the stocks in Pennsylvania and Lima have rapidly accumulated, making the total for this year about double that in 1894. The statistical position is thus rendered more unsatisfactory to holders by the fact that deliveries of petroleum oil in the States have fallen much behind the receipts; and the expectation of a stronger demand arising out of an extended use of the article seems to be a long way from fulfilment. Meanwhile, it is highly necessary that fresh outlets should be found for the consumption of mineral or burning oils, to preserve an equal balance between the quantities produced and delivered at the principal centres of the trade; for it does not conduce to the best interests of importers, dealers, or consumers for petroleum oil to be too dear at one time for the business generally to be in a thriving condition, nor too cheap at another period for leaving a fair margin of profit for its freer consignment and distribution.

Either extreme of depression or buoyancy, when it is witnessed, indicates an unhealthy state of the market, and cannot be calculated to lead to an active and wholesome amount of dealing in the article anywhere. We had a convincing proof in April last of the disturbance occasioned to trade by speculators suddenly coming forward as buyers at exceedingly low rates, when the London quotations for standard American on the spot leaped up from 5½d. to 9½d., or 4d. per gallon, within the space of three weeks; and when, moreover, operations at all the chief depôts came to an abrupt standstill. A similar spurt is likely to occur again whenever the opportunity offers, the same as a further heavy reduction in value would speedily ensue if prices were abnormally high through a mischievous interference with the natural course of supply and demand. At present, however, neither of these changes is expected to take place, as there is nothing in the general outlook for petroleum oil to make an extensive rise or fall in the current rates easy of accomplishment. Still, if great producers of mineral oil resolve to undersell each other almost to the verge of ruin, so as to gain a virtual monopoly of the import trade, serious consequences may follow, and such an event, which is the only peculiar one operators have to apprehend just now, is well within the range of probability.



SECTION OF SULPHURIC ACID ELEVATOR.



## The Patent List.

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of the Manchester  
of the Manchester  
of the Manchester

## PATENTS FOR ENGLISH LETTERS PATENT.

- Improvement in Washing Bones or Bone Meal. J. Fels  
4,138. February 24.  
Sulphuric Acid. A. G. Brookes. 4,139. February 24.  
Sulphuric Acid and other Salts. A. G. Brookes. 4,140. February 24.  
Sulphuric Acid. A. G. Brookes. 4,141. February 24.  
Sulphuric Acid. A. G. Brookes. 4,142. February 24.  
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Sulphuric Acid. A. G. Brookes. 4,176. February 24.  
Sulphuric Acid. A. G. Brookes. 4,177. February 24.  
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Sulphuric Acid. A. G. Brookes. 4,189. February 24.  
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Sulphuric Acid. A. G. Brookes. 4,191. February 24.  
Sulphuric Acid. A. G. Brookes. 4,192. February 24.  
Sulphuric Acid. A. G. Brookes. 4,193. February 24.  
Sulphuric Acid. A. G. Brookes. 4,194. February 24.  
Sulphuric Acid. A. G. Brookes. 4,195. February 24.  
Sulphuric Acid. A. G. Brookes. 4,196. February 24.  
Sulphuric Acid. A. G. Brookes. 4,197. February 24.  
Sulphuric Acid. A. G. Brookes. 4,198. February 24.  
Sulphuric Acid. A. G. Brookes. 4,199. February 24.  
Sulphuric Acid. A. G. Brookes. 4,200. February 24.

## TRACTS OF LATEST COMPLETE SPECIFICATIONS.

abstracts are specially prepared for the Chemical Trade Journal  
RIGHTS of publication are RESERVED. This is the earliest  
of abstracts of Chemical and allied patents accessible to the

and Filtering Process and Apparatus. F. H. Eydmann, 161, Rotter-  
dam, Weg, Delft, Holland. Eng. Pat. 2,722. February 7, 1895.

fluid to be filtered is passed through tubes, the inner sectional  
which is made to decrease, in the same ratio as the volume of  
fluid is diminished, by the abstraction of the filtrate. The speed  
of the fluid is thus kept constant. The maintenance of the high speed  
prevents the pores clogging, and saves constant washing. The tubes  
are constructed as follows:—An outer tube, provided with outlet holes  
for the filtrate, is fitted internally with lugs that support a tube of wire  
gauze. Inside the gauze the filtering medium is placed in the form of  
a cylinder, made of asbestos board, or cloth, etc. The liquid  
passes through this tube passes through the asbestos board into the  
space between the wire sheath and the outer tube. The  
of the sectional area previously referred to is achieved by  
a tapering mandril, as it were, within the inner tube. This  
may be hollow or solid, and provided with outer helical webs  
which maintain it in its central position, while the same in some cases  
mixing the fluid being filtered. Batteries of these tubes are  
used, there being six drawings showing various arrangements.

Improvements in Purifying Acetates. A. R. Scott, Carntyne Chemical  
Works, Parkhead, Glasgow, and T. Henderson, 29, Bath-street, Glasgow.  
Pat. 6,711. April 2, 1895.

In view to expeditiously and economically purifying acetates,  
particularly those contaminated with tarry matters, owing to their  
distillation from wood, the solution of acetate is boiled  
with a solution of soda. The effect of this operation is to  
or otherwise alter, the impurities, so that what remains in the  
becomes precipitated, and settles to the bottom. After cool-  
ing the supernatant clear liquor may be decanted, and will  
be crystals of the acetate. The hypochlorite is added until the  
solution, after boiling, is clear, and of a comparatively yellow  
color. Ordinary bleach may be used as the source of the hypochlorite.

Preparation of Assimilable Iron Compounds. O. Inuray, 28, Southampton-  
row, London (communicated by the Farbwerke vormals Meister Lucius  
and Brüning, Höchst a/M., Germany). Eng. Pat. 7,169. April 8, 1895.

that has been previously freed from coagulated albumen and  
is treated with milk of lime, or any other salt giving a  
precipitate with phosphates in a neutral solution. Any excess of  
lime in the filtrate is removed by carbon dioxide, sulphuric or  
hydrochloric acid, and finally the assimilable iron compound is precipi-  
tated from a hot solution by ferric chloride or other iron salt. The  
precipitate when washed and dried, is a heavy brown powder, containing  
10 per cent. of iron.

Improved Composition for Purifying Water in Reservoirs and  
and in Steam Boilers. L. Lachery, La Bassée, Nord, France.  
11,289. June 8, 1895.

The composition is stated to be capable of purifying water  
cold in the course of a few hours, and to act immediately when  
The mixture is of a complex nature. The main ingredients are  
sugar, molasses, potato flour, tannin, glycerine, caramel, and  
small percentage of silver nitrate, mixed with a solution of  
"cachou" (extract of *mimosa catechu*), and neutral oxalates of  
mixed with oxalic acid and sufficient organic matter to hold them.  
Equal parts of the above and neutral sodium phosphate may  
be used. Special instructions are given for the preparation  
of "cachou." For the exact proportions the specification must  
be consulted, but the four first named articles constitute 77 per cent  
mixture.

## The Ship Canal and Chemical Trade.

## FEBRUARY EXPORTS OF SALT.

The shipments of Cheshire salt during February from West-  
Runcorn lay-by, and other Ship Canal ports, were much a  
average, the trade, both coastwise and foreign, having in-  
creased activity. Of white salt 1,323 tons were shipped from  
Point, and 5,606 tons from Runcorn, &c., a total of 6,929 tons  
5,159 tons in January. The total shipments from the Mersey  
month were 32,554 tons. There were also shipped from I.  
and the Ship Canal ports 3,424 tons of rock salt.

## LOGWOOD IMPORTS.

Two sailing vessels laden with logwood from the West India  
at Falmouth last week, and were ordered to Manchester to dis-  
These are the *Vanse*, 432 tons, from the Black River, Jama-  
the *Vigilant*, which sailed from Laguna on December 30th  
vessels left Falmouth for the canal on Saturday. The *Acadie*,  
and *Heveskes II.*, 390 tons, are also reported fixed for Manche-  
cargoes of logwood from Jamaica.

## PITCH EXPORT TRADE WITH FRANCE.

A business of considerable magnitude is now being done  
exportation of coal-tar pitch from Manchester to the West of  
of France by way of the Ship Canal, and during the past  
months quite a large amount of both steam and sailing ton-  
nage has been requisitioned for this trade. The bulk of the shipments  
have been to the ports of St. Nazaire (Loire Inférieure) at  
(Hérelault) but a new departure has been made in the shipment  
Pomona Docks of a large consignment to Les Sables d'Ole  
railway port in the Department of Vendée—by the steamer *M.*  
tons register, which sailed on Tuesday. Another large cargo  
for France is now being loaded at No. 7 Pier by the steamer *C.*  
tons register, the port of destination in this case being Cete  
steamer *Eviva*, which met with an accident near Eastham whi-  
voyage from Manchester to Cete with pitch, is now undergoing  
at Birkenhead.

## EXPORTS OF PETROLEUM FROM U.S.

THE Chief of the Bureau of Statistics, Washington, gives the  
following returns of the exports of petroleum and petro-  
products for January, 1896. The total shipments were 77  
gallons, compared with 77,264,410 gallons in 1895. The total  
seven months ending January, 1896, was 528,453,772  
against 550,561,275 gallons during the same period in 1895.  
Details of the shipments are as follow:—

| CRUDE PETROLEUM.          |       | Gallons.  |
|---------------------------|-------|-----------|
| Total, January, 1896      | ..... | 6,159,99  |
| " " 1895                  | ..... | 9,287,97  |
| NAPHTHAS.                 |       |           |
| Total, January, 1896      | ..... | 1,572,67  |
| " " 1895                  | ..... | 1,377,53  |
| ILLUMINATING.             |       |           |
| Total, January, 1896      | ..... | 65,724,16 |
| " " 1895                  | ..... | 63,131,11 |
| LUBRICATING AND PARAFFIN. |       |           |
| Total, January, 1896      | ..... | 4,186,86  |
| " " 1895                  | ..... | 3,457,67  |
| RESIDUUM.                 |       |           |
| Total, January, 1896      | ..... | 43,34     |
| " " 1895                  | ..... | 10,11     |



## INJUNCTION AGAINST THE PLYMOUTH GAS CO.

IN the action brought by Mr. William Osmond Ward against the Plymouth Gas Company in the High Court of Justice a verdict has been given for the plaintiff, and an injunction granted. Mr. McColl, Q.C., and Mr. William Graham, Q.C., instructed by Messrs. Wilson and Loye, represented the plaintiff; and Sir Edward Clarke, Q.C., Mr. Channel, Q.C., and Mr. H. E. Duke, instructed by Messrs. Shelly and Johns, the defendants. Plaintiff, who owns a tannery adjoining the gasworks, claimed damages and an injunction to restrain the defendants from carrying on their business in such a way as to cause a nuisance. In the pleadings it was stated that plaintiff had for 20 years, until September, 1894, carried on his business without experiencing any annoyance from the gasworks, although the old retort-house was situated on the southern side of the tannery, and his drying lofts extended close up to the company's northern boundary. In the year 1893 the company, on land purchased from the plaintiff, commenced the erection of a new retort-house, extending in front of and beyond plaintiff's drying lofts, there being a distance of only 20 yards from the southern end of the drying lofts to the new retort-house. The new block was completed in September, 1894. In this retort-house the company adopted a new process. Simultaneously with the opening of the new works a nuisance was created. When south, south west, and south-east winds prevailed, volumes of smoke, charged with fiery, black dust, were emitted from the new retort-house, and settled over all the plaintiff's premises, internally and externally, the dust finding free admission through the open louvres and windows. It covered the floors of the premises, and settled on both the open liquor pans and on the leather in the various stages of manufacturing process. Much dust was also created by quantities of hot coke being stacked against the boundary wall dividing the gasworks from the tannery. The effect of the deposit of dust upon the leather while in a half-dry state was to soil and make it altogether unsaleable, and plaintiff had to take special precautions to keep the leather clean.—As the result of private consultations between the counsel engaged in the case, it was agreed that a verdict should be entered for plaintiff with costs, and an injunction granted to restrain the defendants from carrying on their business in such a way as to create a nuisance, the damages to be assessed by an official referee.—The Lord Chief Justice gave judgment accordingly. It is understood that several other owners of property at Coxside intend suing the Gas Company for damages and an injunction on similar grounds.

## IMPROVED TUBE FOR OBTAINING X-RAYS.

ON Wednesday, 4th inst., Mr. A. A. Campbell Swinton read a paper before the Society of Arts on "Röntgen's Photography of the Invisible." Mr. Swinton began by giving an account of some of the phenomena of electrical discharge in high vacua, mentioning particularly the properties of the cathode rays. Passing on to deal with Röntgen's rays, he discussed the conditions on which the opacity or transparency of a particular substance seemed to depend, and also showed experimentally their property of discharging a body charged with either positive or negative electricity. He went on to consider what was the best form of Crookes's tube to employ for photography of the invisible, and described a new tube from which he had obtained superior results. In it, he said, the cathode plate was concave, so as to focus the cathode rays upon a point on the piece of platinum foil forming the anode. The foil was bent at an angle of 45 deg. to the direction of the cathode rays so as to throw down the Röntgen rays, which in this case proceeded from the platinum, not the glass. The advantages of this tube were that it gave a sharpness of definition otherwise unattainable, and that there was less chance of the glass being cracked by heat. It appeared to him to represent the most important advance yet made in connection with the apparatus required for the practical applications of Röntgen's photography. As to other points in the construction of the tube used, he said it must be made of soda, not lead, glass. Further, it must be exhausted to a very high degree, though what exactly was the best degree of exhaustion was uncertain. The best plan was to keep the tube connected with a mercury pump, so that the exhaustion could be varied at will. He found that even a sealed-up tube would not retain the same exhaustion from day to day owing to absorption of residual gases by the electrodes, condensation on the glass, &c. In conclusion, Mr. Swinton exhibited an apparatus, similar to that described by Professor Salvioni, of Perugia, in which the property possessed by platino-cyanide of barium, among other substances, of fluorescing under the influence of the Röntgen rays was utilised so as to make it possible to see such things as coins in purses, and even the bones inside the hand. The actual process of photographing by Röntgen's rays was shown during the course of the lecture, and a large

number of photographs of the human hand and foot, fish, animals, &c., were exhibited on the screen.

In proposing a vote of thanks, Professor Dewar (the chairman) said that, by his activity in bringing forward Professor Röntgen's results, Mr. Swinton had done a real service to science. For of real science it was impossible to have too much popularity, and the more the public were interested in scientific discovery the more secure was the position of England. At any rate, there would be no possibility of intellectual isolation. The discovery, perhaps the most extraordinary of the last half century, which we owed to Röntgen, was one to be thankful for because of the stimulus it had given to scientific inquiry. But it had also stimulated a kind of criticism which he felt ought not to be entertained. This was the theory that a discoverer had a monopoly in his discovery. In science there was no monopoly. A man who made a discovery gave a gift to science. He himself had not the pleasure of knowing Professor Röntgen, but he was sure that the latter, so far from thinking that Mr. Swinton in bringing forward this subject was detracting from his fame, would feel that he was but adding fresh laurels. To say that one man, locked within his own laboratory and, as it were, cultivating alone his own little garden plot, could have done as much as had been done by united effort in a few months was preposterous. Such a theory would retard the progress of science, and was, he thought, based on too great consideration for the personality of the discoverer. As to the nature of the Röntgen rays, Mr. Swinton, like other persons, was not inclined to commit himself. Professor Dewar himself felt that we were on the dawn of new knowledge about the material medium known as the ether.

## THE GRASSELLI CHEMICAL CO.

A VISIT was recently paid by the members of the American Chemical Society to one of the works of this well-known company, who operate ten different works in various parts of the United States, one of the largest being the works visited by the members at Cleveland. The plant and processes inspected may be summarized as follows:—

**Sulphuric Acid.**—Several systems are operated for burning lump and fine ore, the latter being especially adapted for such work. Only pyrites is burned, obtained from different parts of the States and abroad. The construction of these plants was found to be modern, and the equipment equal to the best.

In connection with these systems are the concentrating plants where sulphuric acid in large quantities is concentrated to its various commercial strengths.

**Nitric Acid.**—In this plant nitric acid was seen in process of manufacture from Chili saltpetre on a large scale. In connection with this was a plant for the production of different grades of acid for the trade.

**Hydrochloric Acid.**—This plant comprises various modern devices for the manufacture of numerous qualities of muriatic acid. Sodium chloride and nitre cake are used to a large extent. Salt cake from these plants is worked up in large quantities and sold to glass manufacturers.

**Mixed Acids.**—In this department sulphuric and nitric acids of proper strengths are mixed in such proportions as the trade demands, and sold in large quantities to dynamite manufacturers.

**Glycerine.**—This plant is adapted to the manufacture of chemically pure glycerine, which is obtained on the large scale from crude glycerine by distillation with steam. This department has achieved considerable reputation for the quality of the product, which is equal in every respect to any in the market. Great care is exercised in this manufacture, and many chemical tests made to insure a high-grade article. A beautiful product is made, and each visitor was presented with a small bottle as a souvenir.

**Ammonia.**—In this extensive plant large quantities of ammoniacal liquor are worked up into all grades of aqua ammonia, ammonium sulphate and other ammonia products.

**Laboratories.**—The different laboratories were visited, and chemists were found busy in many operations of interest to the analytical and research chemist.

The extensive shops of the company as well as the sal-soda and Glauber's salt plants were also visited.

**MESSRS. DOMEIER AND CO.**—We are informed that this firm has been appointed agent to the Electrochemische Werke Belin, for the sale of their calcium carbide, metallic sodium, and caustic potash. Messrs. Domeier's offices are at 13, St. Mary-at-Hill, London, E.C.

**SERIOUS FIRE AT A PRINTWORKS.**—A very disastrous fire occurred late on Sunday night at the extensive printworks of Messrs. Salis Schwabe and Co., at Middleton, near Manchester. A large building was destroyed, together with vast quantities of cloth and machinery. The damage is estimated at £80,000.



## Trade Notes.

**FOOD ADULTERATION COMMITTEE.**—The Select Committee of the House of Commons appointed to consider the question of food products adulteration met last week, and elected Mr. T. W. Russell chairman. They met again on Tuesday for the purpose of taking evidence, when the first witnesses were Mr. Lloyd and Mr. Hehner.

**SINKING OF A MANURE CARGO.**—Last week the flat *Energy*, belonging to Mr. William Burton, of Liverpool, laden with manure, was sunk in the River Mersey, just outside the Ship Canal, Weston Point. The vessel was making for the Weston Mersey Lock to enter the Canal, when she forcibly struck the outer wall. She was damaged so seriously that within a few minutes she sank. Captain Horton and mate escaped. The wind was very strong at the time.

**A LARGE GLASSWORKS ABOUT TO CLOSE.**—On Saturday, 8th inst., the notices of 350 men employed at the glassworks of Messrs. Hartley and Co., Sunderland, expired. It was expected that on Saturday the works would have closed. An interview, however, subsequently took place between representatives of the masters and men, and the men's delegates were informed that their notices would be extended another week. No reason is assigned for the dismissal of the men, and there has been no dispute.

**SALTERS' COMPANY'S RESEARCH FELLOWSHIP.**—The executive committee of the City and Guilds of London Institute have awarded the second Salters' Company's Research Fellowship, for the encouragement of higher research in chemistry in its relation to manufactures, to Mr. Sidney Williamson, Ph.D., F.I.C., F.C.S., who was for two years a student at the City and Guilds Technical College, Finsbury, and subsequently for three years at the City and Guilds Central Technical College. The fellowship is tenable at the latter, and Mr. Williamson proposes to work on some questions bearing on food-stuffs generally, more particularly the examination of some definite albumenoids, with the ultimate object of ascertaining the influence of various manures on the growth of crops in so far as *quality* of produce is concerned.

**MERSEY RUBBER CO., LTD.**—A meeting of the creditors of this company, whose works are at Bank Quay, Warrington, was recently held in the offices of the Official Receiver in Bankruptcy. Mr. W. J. Warley, official receiver of the High Court, presided. The company was formed in March, 1894, and a winding up order was made on the 15th January of this year. Mr. Warley pointed out that a final statement of accounts had not yet been filed, but it appeared that the liabilities were roughly £22,278., and the estimated assets were about £19,900. He expressed the opinion that the assets were not valued at a low estimate. The purchase price of the company was £37,500. He understood that the debenture holders intended to sell their property, and this, he thought, was the best thing to do under the circumstances. A resolution authorising the official receiver to continue to act as liquidator was carried unanimously. A committee of inspection was also appointed.

**Obituary.**—The owner of one of the earlier founded English chemical works has passed away in *Richard Bealey*, who died on Tuesday, the 3rd inst. The works at Radcliffe, founded in 1793 as a vitriol works to supply the bleaching croft of the firm with acid, has gradually developed until it is not far behind works of more modern establishment. Glover and Gay Lussac towers were erected in 1871, the Deacon chlorine process in 1873, the Weldon process in 1876, and last year saw the caustic soda manufacture fully established. Bealey's was one of the earliest works in which high-strength bleaching liquor was made. Mr. Adam Bealey, who is or was a physician at Harrogate (Mr. Richard Bealey's brother), having assisted in a very marked degree in putting the manufacture upon a proper scientific basis. In common with several other old-established firms, Mr. Bealey did not join the Alkali Union, although he was often pressed to do so.

## Market Reports.

### TAR AND AMMONIA PRODUCTS.

Benzols are much about the same as last week, the forward position for 50/90's being easier at 1s. 8d. Carbolic acids are very firm and dearer; crude 60% is now quoted 2s. 4d., and 40% crystals 10d. Naphthas are unaltered from last week, either as regards price or position. Anthracene and creosote quiet. Pitch easier at 34s., f.o.b. East Coast.

Sulphate of ammonia is quiet, and prices have been scarcely maintained. The prospective advance in nitrate may strengthen the hands of makers, but the issue is problematical. There would apparently be fair demand at a slight concession in prices, but so far makers refuse to give way any further. Beckton stands at

£8. 7s. 6d., London outside makes £8. 10s., Liverpool and £8. 8s. 9d., and Leith £8. 7s. 6d., spot.

### REPORT ON MANURE MATERIAL.

There has been more enquiry, but actual business done is no factory for the time of year now reached. There is business done in mineral phosphates, but there is no improvement on last prices. In the absence of cargoes offering, there is no business to report in River Plate bones. For crushed East India bones on spot, £4. 10s. ex store, required, but for shipment, £3. 17s. 6d. would be acceptable. After considerable sales of Bombay bone meal at £3. 16s. 3d. on spot and for shipment, the price has been advanced to 17s. 6d. for shipment, and to £4. per ton, ex store, on spot. Crushing bones are worth £3. 12s. 6d. to £3. 15s. per ton, according to quality and condition. Nitrate of soda remains firm. Spot is 8s. for good, up to 8s. 1½d. for refined quality. Due cargo worth about 7s. 11¼d. per cwt, ordinary quality. Home-produced dried blood finds a better sale at 7s. 6d. per unit, f.o.r. at works.

### MISCELLANEOUS CHEMICAL MARKET.

In the alkali trade a fairly steady business is being done in leading products. There are no changes of note during the values all round remain steady. Bleaching powder in fair request at £7. per ton, f.o.r. makers' works, and £7. 5s. per ton, hard f.o.b. For caustic soda current quotations are:—F.o.b. Liverpool 77%, £9. 7s. 6d.; 74%, £8. 10s.; 70%, £7. 10s.; 60%, £6. 10s. per ton, 10-ton lots. Chlorate of potash and soda quiet, and are still sellers at fractions below the nominal quotations of 4½ and 6½d. per lb respectively. Alkali, 58%, steady at £3. 7s. 6d. makers' works. Soda crystals 35s. to 37s. 6d., bags, makers' Saltcake: Some small resales offered at slightly lower rates, but f.o.r. makers' works, is about the general quotation. Sulphur copper has receded a little—sellers at £18. 5s. to £19. per ton according to brand. Brown acetate of lime still in a depression and little business doing even at the low price—spot quoted £4. 10s. to £4. 12s. 6d., c.i.f.; grey £7. to £7. 5s., c.i.f. acid selling at low rates; other acetates without change. It continues good for potash, caustic and carbonate, and there are changes to record in values. Prussiate of potash quiet at 7½d. Cyanide, 97%, 1s. 2½d. In sulphocyanides rather more doing, improvement in prices. For crystal carbolic the market is very firm and price further advanced for 39/40 to 8½d. per lb. Aniline salt are tending lower, owing to slackness of demand and cheap material. White powdered arsenic still continues to advance to 10s. per ton. Oxalic acid 3½d. per lb.

### LIVERPOOL MINERAL MARKET.

The firmness of our market continues to increase. Some of the arrivals being exceedingly scarce, the arrivals being considerably fewer. Manganese: The arrivals this week are very small, whilst the forward both spot and forward is considerably increased, and price firmer. Ground manganese is brisk, at £7., £8., £10., and £12. per ton. Sulphate of manganese, high percentage, £18. 10s. Manganiferous iron ore is brisk, at 1s. to 1s. 6d. per ton. Chrome ore: There have been more arrivals, and prices are steady. Bauxite continues in good demand, but prices are up 20s. for firsts, 16s. for seconds, and 12s. for thirds, f.o.b. chalk: High grades are in good demand, and imports can keep pace with the demand for "Angel White" qualities; prices are firm, at 70s. to 75s., 80s. to 90s., and 100s. to 110s. Wolfram and scheelite are unaltered; stocks are small, and firm. Arsenic continues very scarce, at £20. to £22. per ton. earth is steady, at 50s. for lump, 55s. for ground, and 75s. per impalpable powder, "Emerald," and other brands. Ochre: There has been a good inquiry for good staining quality 60s. to 65s. for ochre and 40s. 9d. for umber. Barytes: Sulphate demand is fair, without change in prices; carbonate, the demand steady, at 65s. for smalls and 80s. for lump, according to quality. Plumbago continues to move freely, foundry and lubricating being done at £6. to £10. per ton, and prime Ceylon at £20. per ton, according to grade. Molybdenite moves. Antifriction ore has been very scarce, and the price has therefore advanced, but a new source of supply has been discovered which brings prices down to their normal level. Pumice stone is in fair demand being done at £6 to £7. per ton, and superior at £7. 10s. per ton. Bog ore: The demand continues at 22s. 6d. to 25s. per ton. Lead ore: The demand for quality is steady, at somewhat better figures.



## THE METAL MARKETS.

NDON, WEDNESDAY.—Pig iron, steady: Scotch warrants at 47s. 5d.; Middlesbrough, 38s. 6d. cash, and hematite, 40s. Copper, unsettled: Chili bars, G. O. B.'s and G. M. B.'s at £44. 15s. to £45 cash, and £45. 2s. 6d. to £45. 7s. 6d. months. Tin, easy: Straits closed at £60. 10s. to £61. and £61. to £61. 10s. three months. Australian, £61. 5s.; Spanish, £11. 1s. 3d.; English, £11. 5s.; Silesian, ordinary, £15. 2s. 6d. to £15. 5s. Nickel, 1s. 2½d. Antimony, Quicksilver: first hands, £7. 2s. 6d.; second hands, 5s. 6d. Copper shares, easy: Cape, 2½ to 2½; Copiapo, 2 to 2¼; a, 3 to 3¼; Mason and Barry, 2½ to 3½; Rio Tinto, 17¼ to 18; Tharsis, 5 to 5¼.

GLASGOW, WEDNESDAY.—Market easier, with good business. Done at 47s. 5½d. cash, also at 47s. 7½d. one month; closing buyers at 47s. 5d. cash, sellers ask 47s. 5½d. Cleveland done at 8½d. one month; closing with buyers at 38s. 6d. cash, sellers 8s. 6½d. Cumberland hematite done at 49s. 1½d. one month; closing with buyers at 48s. 10d. cash, sellers ask 48s. 10½d. Middlesbrough hematite closes with buyers at 46s. 3d. cash, sellers ask 46s.

## LIVERPOOL OIL AND COLOUR MARKET.

WEDNESDAY.

LS.—Palm oil is firmer, but quiet in consequence of buyers being scarce. Lagos has been done at £19. 15s. spot, transit. Olive is steady, and prices for forward are firmer. Syrian is quoted 10s. per tun. Linseed keeps easy, but there is a better demand, Liverpool makes at 20s. 3d. to 21s. per cwt., in export casks, linseed is unaltered, Liverpool refined still standing at 17s. 3d. to 18d. per cwt. Castor oil is steady, good seconds Calcutta being at 2½d. ex quay, and 2½d. store. First pressure French, 2½d. per lb. There is practically nothing doing in tallow, and prices are nominal. Resin meets with a fairly good demand, prices fully maintained. Spirits of turpentine are steady at 21s. 3d. wt. spot. Petroleum is rather firmer, with a better demand. Russian is quoted 6d. to 7½d., and Russian refined 5½d. to 5¾d. gallon.

COLOURS are steady, without alteration in prices. Oxfordshire, common, £10., medium, £12., best, £15. Wexfordshire, common, 40s.; medium, 50s., best, 60s.; Welsh, best, 50s., and common, 18s.; Irish, Devonshire, 40s. to 45s.; French, J.C., 60s. to 65s.; M.C., 65s. to 67s. 6d. Umber: black, 40s.; Devonshire, 50s. to 55s. White lead, £16. Red lead, 10s. Venetian red, £6. to £10. Cobalt: Prepared oxide, 10s.; black, 9s.; blue, 6s. Zaffres: No. 1, 3s. 6d.; No. 2, 2s. Oxide of iron: Common, £7.; medium, £10.; finest, £20. oxide, £22. 10s. to £25.

## TYNE CHEMICAL REPORT.

TUESDAY.

There is practically no alteration to report; business as yet is only moderate. Soda crystals, £2. 2s. 6d. per ton, gross weight, locally. Bleaching powder at £7. to £7. 5s. per ton. Caustic, 76/77%, £9. 5s. in; 70%, £7. 10s. to £7. 15s. per ton. Bleaching powder, softs, £7. 5s. per ton, nett; hards, £7. 10s. per ton, nett; caustic soda, 76/77%, £9. 5s. per ton, nett; do., 70%, £7. 15s. in, nett; recovered sulphur, 2 cwt. bags, £3. 17s. 6d. per ton, nett; ash, 48%, £3. 15s. per ton, nett; do., 52%, £3. 17s. 6d. per ton, nett; do., 56%, £4. per ton, nett; alkali, 36%, £2. 15s. in, nett; white alkali, 48%, £4. 10s. per ton, nett; do., 50%, £5. per ton, nett; do., 52%, £5. per ton, nett; hyposulphite of soda, 5-7 cwt. casks, £6. 5s. per ton, nett; do., 1 cwt. kegs, £7. in, nett; silicate of soda, 75° Tw., £2. 12s. 6d. per ton, nett; 100° Tw., £3. per ton, nett; do., 140° Tw., £3. 7s. 6d. in, nett; soda crystals, casks, £2. 2s. 6d. per ton, nett; weight; do., 2 cwt. bags, £2. 2s. 6d. per ton, nett weight; rate of potash, 5d. per lb., less 6%; pearl hardening, per ton, nett; pure white sulphate of alumina, £3. 17s. 6d. in, nett; blanc fixe, £7. 5s. per ton, nett; chloride of barium, d crystals, £6. 15s., per ton, nett; do., 90/95%, crude calcined, per ton, nett; sulphide of barium, crystals, £4. 15s. per ton, nett; rate of alumina, £30. per ton, nett; aluminate of soda, £30. in, nett.

LT.—South Durham salt is steady at 9s. per ton, f.o.b. Tees.

ALS.—The coal trade is still very quiet, though there is a slightly increased demand for steam. Business is brisk in coke, and, with an increasing consumption, price is firm at 14s. 6d. to 15s. 6d. per ton. Quotations are:—Best Northumbrian steam, 8s. to 8s. 6d.

per ton; second qualities, 7s. to 7s. 6d. per ton; small steam, 3s. 6d. to 3s. 9d. per ton; bunker coals, unscreened, 6s. 3d. to 6s. 9d. per ton; gas coals, 7s. to 7s. 3d. per ton; household coals, 10s. to 10s. 6d. per ton; coke, firm, 14s. 6d. to 15s. 6d. per ton.

## WEST OF SCOTLAND CHEMICALS.

GLASGOW, TUESDAY.

Chemicals generally have been unmoved during the week, with the one exception of sulphate of copper, which has marked a further sharp advance. Alkalies are in slightly improved inquiry for home wants, but the outlook for the spring shipments presents rather a dull appearance for the moment. Sulphate of ammonia makes some faint signs of bestirring itself, and holders here are rather stiffer in their attitude, £8. 10s. being waited for by some of them for Glasgow shipment. Leith prompt, nevertheless, cannot as yet be stated as higher than the old figure, £8. 7s. 6d., and there is still a very large margin for needful recovery. In the mineral oil and paraffin section there is, no change of any unexpected kind, though deliveries are falling off with the season, and neither burning oil nor naphtha are in so much request. The Mineral Oil Association have been meeting frequently, and there are whispers of some new move in preparation—to be shortly announced.

Chief prices current are:—Soda crystals, £2. 2s. 6d., nett, Tyne; soda ash, 48/56°, £3. 15s. to £4. 15s. nett, Tyne; white alkali, 48/52°, £4. 10s. to £5. nett, Tyne; alum in lump, £5 to £5. 5s. nett, Glasgow; caustic soda, white, 74° £8. 10s., 70/72° £7. 10s., 60/62° £6. 10s., and cream 60/62° £6. 7s. 6d., all nett, Liverpool; bleaching powder, £6. 5s. to £7. 5s. nett, Tyne; saltcake, 27s. 6d.; borax, English, refined, £20., and boracic acid, £30. nett, Glasgow; bicarbonate of soda, 5-cwt. casks, £6. 10s., and 1-cwt. casks £6. 15s. nett, Liverpool; bichromate of potash, 4½d. nett, for Scotch and English deliveries (for export, 4½d. nett, f.o.b. Glasgow); bichromate of soda, 3¼d. nett, for Scotch and English deliveries (for export, 3½d. nett, f.o.b. Glasgow); chlorate of potash, 4½d. less 5%, Liverpool; nitrate of soda, 8s. 3d.; sulphate of ammonia, £8. 7s. 6d. prompt, f.o.b. Leith; sal ammoniac, first and second white, £39. and £37. nett, any port; sulphate of copper, £19. 10s., less 5%, Liverpool; paraffin scale, hard, 1½d., and soft, 1½d. to 1½d. per lb.; paraffin wax, 120° semi-refined, 2½d. to 2½d.; paraffin spirit (naphtha), 7½d. per gallon; paraffin oil (burning) No. 1, 6½d., and crystal, 6½d., at works, for Scotch buyers (English sales about ½d. lower); ditto (lubricating) 865° £5., 885° £5. 10s. to £6., and 890/895° £6. to £6. 10s. Week's imports of sugar at Greenock were 24,651 bags beet unrefined.

## HULL PAINT, OIL, AND COLOUR REPORT.

TUESDAY.

OILS.—Prices still have a tendency downward, and the import of linseed during the week has been 13,077 quarters, principally from Rosario. Amongst the principal imports into Hull during the year to date, compared with the same time a year ago, are the following:—Linseed, 98,598 quarters, against 39,027 quarters; rapeseed, 8,508 quarters, against 20,858 quarters; cottonseed, 52,916 tons, against 54,368 tons; olive oil, 4,727 casks, against 1,768 casks; rape oil, 1,019 casks, against 2,771 casks; oilcakes, 4,459 tons, against 3,450 tons; tallow, 6,825 cwt., against 2,327 cwt.; bones, 1,593 tons, against 1,425 tons; turpentine, 6,167 barrels, against 2,980 barrels; guano, 380 tons, against 20 tons. Linseed oil on the spot has declined about 7s. 6d. per ton, 18s. 3d. naked having been accepted, closing, however, with buyers at this rate. Forward positions steady: 18s. 6d. quoted March-April, May-August, or September-December; boiled and refined, £1. to £2. per ton extra. Export for the week, 1,480 cwt. Refined cotton oil remains dull at 15s. 1½d. naked, spot; March-April quoted 15s. 3d., and May-August 15s. 10½d. to 16s. Crude offers at 13s. 9d. naked, spot; casks £1. and ordinary barrels £1. 10s. per ton extra. The export of refined for the week, has been 6,660 cwt. Olive oil from £29. per tun. Spirits of turpentine, £1. 1s. 6d., in barrels. Castor oil remains firm and unchanged. Reports of the yield of cod oil are unsatisfactory. Neutral liquid soap, £14. per ton. Boiled siccative oil, £13. per ton. Locomotive grease, £12. per ton.

CAKES.—Linseed cakes steady: 95% pure, £6. 2s. 6d.; Russians, £5. 17s. 6d. to £6. 2s. 6d.; Americans, £5. to £5. 2s. 6d. Oil cakes, £5. Cotton cakes in quiet demand; market very firm: Best makes, £3. 12s. 6d. to £3. 15s.; seconds, £3. 10s. Rape cakes (Black Sea) firmer; somewhat scarce: Black Sea, £2. 10s. to £2. 12s. 6d.; East India, £3. 10s. to £3. 12s. 6d.

PAINTS continue in good demand, with plenty of inquiries. Prices are:—White and red leads unchanged. Various ordinary colours, in oil, from £11. per ton; paint remover, £1. 5s. to £1. 10s. per cwt.; ready-mixed paints from £24. per ton; imperial black varnish, £5. 10s. per ton, in barrels.







**Potassium Chlorate**—  
Holland, 18 pks. R. W. Greeff & Co.

**Potassium Chloride**—  
Sweden, 11 bgs. G. Boor & Co.  
Germany, 1,000 pks. F. W. Berk & Co.

**Potassium Cyanide**—  
Holland, 5 pks. F. Boehm

**Potassium Sulphate**—  
Belgium, 400 pks. F. W. Berk & Co.

**Pumice Stone**—  
Austria, 4 t. J. Greig  
Italy, 3 c. A. Steadmann & Son

**Quicksilver**—  
Spain, 37,500 lbs. N. M. Rothschild & Son  
Italy, 37,500 L. & I. D. Jt. Co.

**Rosin**—  
U. States, 200 brls. C. Tennant, Sons, & Co.

**Saltpetre**—  
E. Indies, 1,323 bgs. Lucas & Spencer's Wf.  
Germany, 500 C. Wimble & Co.  
10 cks. Noll's Explosives Co.

**Soda**—  
E. Indies, 490 bgs. Co-op. Lightre. Association  
Holland, 10 cks. Petri Bros.  
Germany, 40 J. Hall & Son

**Sodium Acetate**—  
France, 70 pks. H. Lorenz

**Sodium Hyposulphite**—  
Holland, 50 pks. F. Boehm

**Sodium Prussiate**—  
Belgium, 19 pks. D. C. Thomas & Sons

**Sodium Sulphate**—  
Holland, 40 pks. Beresford & Co.

**Starch**—  
Holland, 270 pks. T. H. Lee

**U. States**, 95 R. G. Hall & Co.  
Belgium, 400 Sawyer, Sons, & Co.

**Holland**, 500 Hernu, Peron, & Co.  
U. States, 70 Philipps & Graves

**Holland**, 90 Ohlenschlager Bros.  
Belgium, 1,400 Little & Johnston

**Belgium**, 160 J. Harrison  
" 530 E. & T. Pink  
" 380 F. Claydon & Co.

**Stearine**—  
Belgium, 96 pks. 63 bgs. H. Hill & Sons

**U. States**, 14 cks. J. Goddard & Co.  
Holland, 1 J. Owen

**France**, 170 bgs. Walbaum & Tosetti  
N. Zealand, 2 cks. Dalgety & Co.

**Sulphur**—  
Italy, 500 t. Brandram Bros. & Co.

**Tartaric Acid**—  
Italy, 20 pks. B. & F. Wf. Co.

**France**, 5 4 cks. F. C. Devon & Co.  
" 16 F. C. Bacon & Co.

**Holland**, 6 cks. B. & F. Wf. Co.  
" 5 F. C. Devon & Co.

**Tartars**—  
Italy, 25 pks. Kirkpatrick & Co.

**Ultramarine**—  
Germany, 24 cks. T. Hamilton  
Holland, 6 Taylor Bros.

**"**, 6 cks. A. B. Fleming & Co.  
" 4 cks. Haefner, Hilpert, & Co.

**"**, 16 Elkan & Co.  
" 33 pks. Thames S. T. & L. Co., Ltd.

**"**, 19 cks. Hernu, Peron, & Co.  
Belgium, 3 Taylor Bros.

**Varnish**—  
Germany, 12 pks. T. H. Lee  
France, 39 Suter, Hertman & Co.

**Verdigris**—  
France, 1 p't. H. Lorenz

**White Lead**—  
Holland, 36 cks. Randall Bros.

**"**, 96 A. Zumbeck & Co.  
Belgium, 10 brls. J. L. Lyon & Co.

**Germany**, 50 cks. Taylor Bros.  
Holland, 20 cks. E. J. Diggins

**"**, 10 J. Barber & Co.  
Germany, 56 Randall Bros.  
France, 15 Blundell, Spence, & Co.  
" 19 J. Watt & Son

**Wood Pulp**—  
Sweden, 40 pks. Johnsen & Jorgensen

**"**, 80 Christophersen, Andrews, & Co.

**"**, 80 Beadie Bros.  
Norway, 2,400 J. Sharp

**Holland**, 24 bls. Thames S. T. & L. Co.

**U. States**, 176 pks. Hensler, Craig, & Co.

**Holland**, 58 G. Rahn & Co.  
" 603 19 bls. Philipps & Graves

**Zinc Oxide**—  
U. States, 229 cks. M. Ashby, Ltd.  
Holland, 75 J. Matton

**Zinc Sulphate**—  
Germany, 14 pks. F. Smith

## LIVERPOOL.

Week ending February 27th.

**Acetate of Lime**—  
New York, 1,200 bgs.

**Albumen**—  
Marseilles, 11 cs.

**Alum Cake**—  
Kotterdam, 60 cks.

**Aniline**—  
Paris, 16 cks. 1 cs. T. Edwards & Co.

**Arsenic**—  
Huelva, 31 brls.

**Asbestos**—  
Genoa, 10 bgs.

**Benzine**—  
New York, 750 brls.

**Bone Meal**—  
Bombay, 5,463 bgs.

**Boracic Acid**—  
Leghorn, 60 cks.

**Borax**—  
Valparaiso, 2,848 sks.  
Mollendo, 1,819

**Caoutchouc**—  
Valparaiso, 11 pks. W. Brandt, Sons & Co.

**Castor Oil**—  
Leghorn, 15 cs. 40 bxs.

**Chrome Ore**—  
Volo, 300 t. G. G. Blackwell, Sons & Co.

**Cod Oil**—  
Hamburg, 4 cks.

**Cream of Tartar**—  
Tarragona, 5 cs. Sachse & Klemm

**Dyestuffs**—  
Alizarine  
Rotterdam, 6 cks.

**Argon**—  
Bari, 2 cks.

**Cochineal**—  
Teneriffe, 4 bgs. Canary Islands Trading Co.

**Cutch**—  
Rangoon, 500 bxs. Baring Bros. & Co.

**"**, 4,054  
Boston, 997 cs.

**Extracts**—  
New York, 10 brls. R. Schloesser & Sons

**Philadelphia**, 200 bxs. R. J. Francis & Co.

**Nantes**, 625 cks. R. J. Francis & Co.

**Ghent**, 50  
Fustic  
Tampico, 4,071 ps. W. H. Thompson & Co.

**"**, 2,187 H. Kendall & Sons

**Vera Cruz**, 1 lot Rosing Bros. & Co.

**Myrabolams**—  
Bombay, 1,252 bgs.

**Saffron**—  
Valencia, 1 cs.

**Shumac**—  
Trieste, 50 bgs. N. W. Jackson

**Palermo**, 150 J. Kitchen, Ltd.  
" 1,245 75 bls.

**Farina**—  
Trieste, 200 bgs.  
Fiume, 305

**French Chalk**—  
Leghorn, 10 cs.

**Glucose**—  
New York, 300 brls.  
Philadelphia, 50

**Glue**—  
Boston, 3 brls. C. B. Ellis  
Rotterdam, 4 cks.

**St. Nazaire**, 20 10 cs.

**Iodine**—  
Valparaiso, 33 brls. A. Gibbs, So. & Co.

**Linseed Oil**—  
Baltimore, 60 brls.

**Manganese Borate**—  
Hamburg, 2 kgs.

**Mineral White**—  
Trieste, 40 bgs.  
Fiume, 300

**Naphtha**—  
New York, 4,250 brls.

**Ochre**—  
Marseilles, 88 cks.  
Alicante, 103 brls.

**Palat**—  
Boston, 12 cs. J. Waters

**Paraffin Scale**—  
New York, 900 brls. Standard Oil Co.

**Rangoon**, 800 bxs.  
Baltimore, 100

**Phosphate Rock**—  
Fernandina, 1,200 t.

**Plumbago**—  
Genoa, 100 bgs.  
Colombo, 420 brls.

**Potash**—  
Leghorn, 1 420 brls.

**Pumice Stone**—  
Antwerp, 3 dms.

**Pyrites**—  
Leghorn, 300 bgs. 15 cs.  
Messina, 47y.

**Rosin**—  
Huelva, 1,265 t. Matheson & Co.

**Saltpetre**—  
Boston, 2,950 brls.

**Soap**—  
Hamburg, 4 cks.

**Soapstone**—  
Naples, 320 cs.  
Marseilles, 510  
Leghorn, 25  
Palermo, 216

**Sodium Nitrate**—  
Bordeaux, 300 bgs. G. G. Blackwell, Sons & Co.

**Sodium Silicate**—  
Genoa, 300  
Junio, 16,128 bgs. Graham, Rowe & Co.

**Starch**—  
Rotterdam, 6 cks.

**"**, 210 bgs. J. T. Fletcher & Co.  
Boston, 40 cs.

**Ghent**, 221  
" 80  
Rotterdam, 100  
Hamburg, 132

**Stearine**—  
Antwerp, 81 bgs.  
Rotterdam, 26 bls.

**Sulphur**—  
Naples, 50 brls. Brown Bros. & Co.

**Catania**, 402 cks. 175 bgs. 80 brls. & qty.

**Sulphur Ore**—  
Huelva, 1,469 t. Matheson & Co.

**Talc**—  
Fiume, 20 bgs.  
Leghorn, 10

**Tallow**—  
Boston, 25 brls. 300 tcs.  
Baltimore, 75 cs.  
New York, 400 hds.

**Tartar**—  
Bordeaux, 8 cks.  
Barcelona, 5 cs. Sachse & Klemm

**Tartaric Acid**—  
Bari, 16 cks.

**Treacle**—  
Marseilles, 2  
Bordeaux, 2 cs.  
Rotterdam, 2 cks.

**Varnish**—  
Barcelona, 7 cs. A. Crosbie  
Genoa, 2 cks.

**Waste Salt**—  
Hamburg, 203 bgs.

**White Lead**—  
Antwerp, 12 cks.  
Rotterdam, 104

**Wood Pulp**—  
Rotterdam, 268 bls. 200 pks.

**Zinc Oxide**—  
New York, 20 brls.  
Antwerp, 10

**Zinc Skimmings**—  
New York, 69 brls.

## MANCHESTER.

Week ending February 29th.

**Acetanilide**—  
Rotterdam, 10 cks.

**Acetic Acid**—  
Rotterdam, 30 blns.

**Aluminous Cake**—  
Rotterdam, 103 cks.

**Ammonium Acetate**—  
Rotterdam, 2 brls.

**Antimony Salt**—  
Rotterdam, 5 cks.

**Bone Ash**—  
Rio Grande do Sul, 4ty.

**Chemicals** (otherwise undesignated)  
Rotterdam, 16 cks.

**Colours**—  
Antwerp, 2 cks.  
Hamburg, 3  
Rotterdam, 9 13 bxs. 60 brls.

**Dried Blood**—  
Ghent, 10 cs.

**Dyestuffs**—  
Alizarine  
Rotterdam, 45 cks.

**Annatto**—  
Bordeaux, 24 cks. J. & P. Hutchison

**Extracts**—  
Rotterdam, 10 cks.

**Shumac**—  
Bordeaux, 6 bls. J. & P. Hutchison

**Gelatine**—  
Rouen, 20 cs.

**Glucose**—  
Rotterdam, 4 cks.  
Hamburg, 24

**Glue**—  
Rouen, 16 cks. 10 bls.  
Rotterdam, 4 cs. 20 bgs.

**Limestone**—  
Antwerp, 6 cs.

**Potash**—  
Rouen, 4 cks. 21 dms.  
Antwerp, 3

**Soap**—  
Bordeaux, 30 cs. J. & P. Hutchison  
Rotterdam, 2

**Soda**—  
Rotterdam, 7 cks.

**Sodium Nitrite**—  
Rotterdam, 11 cks.

**Starch**—  
Rotterdam, 3 cks. 166 cs.  
Ghent, 40  
Hamburg, 20 pks. 800

**Tartar**—  
Hamburg, 18 cks.

**Tin Oxalate**—  
Rotterdam, 12 brls.

**Tin Perchloride**—  
Antwerp, 10 cks.

**White Lead**—  
Rotterdam, 6 cks.

**Wood Pulp**—  
Hamburg, 40 pks.  
Rotterdam, 205 bls.  
Christiania, 789  
Drammen, 824  
Gothenburg, 1,430

**Zinc Oxide**—  
Rotterdam, 25 brls.

**Zinc Sulphate**—  
Rotterdam, 5 brls.

**Zinc White**—  
Rotterdam, 5 cks.



**HULL.**

Week ending February 29th.

|                                           |                  |                                   |  |
|-------------------------------------------|------------------|-----------------------------------|--|
| <b>Acids—</b>                             |                  |                                   |  |
| Bari,                                     | 44 cks.          | Wilson, Sons, & Co., Ld.          |  |
| <b>Albumen—</b>                           |                  |                                   |  |
| Libau,                                    | 18 cs.           |                                   |  |
| <b>Barytes—</b>                           |                  |                                   |  |
| Rotterdam,                                | 5 bgs.           | W. & C. L. Ringrose               |  |
| Antwerp,                                  | 25 178 cks.      | Bailey & Leetham                  |  |
| <b>Chemicals (otherwise undescribed)—</b> |                  |                                   |  |
| Hamburg,                                  | 3 cks. 1 kg.     | 20 dms. Wilson, Sons, & Co., Ld.  |  |
| Gothenburg,                               | 20               | Veltmann & Co.                    |  |
| Bremen,                                   | 4                | W. & C. L. Ringrose               |  |
| Antwerp,                                  | 50 pks.          | 10 brls. Wilson, Sons, & Co., Ld. |  |
| <b>Cod Oil—</b>                           |                  |                                   |  |
| Bergen,                                   | 66 brls.         | Wilson, Sons, & Co., Ld.          |  |
| <b>Colours—</b>                           |                  |                                   |  |
| Hamburg,                                  | 2 cks.           | Wilson, Sons, & Co., Ld.          |  |
| Ghent,                                    | 16 brls.         | Veltmann & Co.                    |  |
| Bremen,                                   | 3 cks.           | W. & C. L. Ringrose               |  |
| Antwerp,                                  | 18               | Bailey & Leetham                  |  |
| Rotterdam,                                | 120              | 2 bks. W. & C. L. Ringrose        |  |
| Antwerp,                                  | 52 cs. 10        | 16 pks. Wilson, Sons, & Co., Ld.  |  |
| <b>Cryolite—</b>                          |                  |                                   |  |
| Copenhagen,                               | 5 cks.           | Wilson, Sons, & Co., Ld.          |  |
| <b>Dextrine—</b>                          |                  |                                   |  |
| Harlingen,                                | 20 bgs.          | Hutchinson & Son                  |  |
| "                                         | 100 bls.         |                                   |  |
| <b>Dyestuffs—</b>                         |                  |                                   |  |
| Alizarine                                 |                  |                                   |  |
| Rotterdam,                                | 144 cks. 4 brls. | W. & C. L. Ringrose               |  |
| <b>Madder</b>                             |                  |                                   |  |
| Hamburg,                                  | 1 ck.            | J. Pyefinch & Co.                 |  |
| <b>Shumac</b>                             |                  |                                   |  |
| Trieste,                                  | 124 bgs. 20 bls. | Wilson, Sons, & Co., Ld.          |  |
| Palermo,                                  | 1,100            | "                                 |  |
| <b>Valonia</b>                            |                  |                                   |  |
| Smyrna,                                   | 5,080 c.         |                                   |  |
| <b>Farina—</b>                            |                  |                                   |  |
| Ghent,                                    | 174 cs.          | Wilson, Sons, & Co., Ld.          |  |
| Stettin,                                  | 207 bgs.         | "                                 |  |
| Harlingen,                                | 140              |                                   |  |
| <b>Glucose—</b>                           |                  |                                   |  |
| New York,                                 | 350 bgs.         |                                   |  |
| <b>Glue—</b>                              |                  |                                   |  |
| Hamburg,                                  | 100 bgs.         | Sissons Bros. & Co.               |  |
| New York,                                 | 40               | Wilson, Sons, & Co., Ld.          |  |
| Hamburg,                                  | 10 bls.          | "                                 |  |
| Dunkirk,                                  | 36 cks.          | "                                 |  |
| <b>Mineral White—</b>                     |                  |                                   |  |
| Fiume,                                    | 110 bgs.         |                                   |  |
| <b>Minium—</b>                            |                  |                                   |  |
| Rotterdam,                                | 23 cks.          | Hutchinson & Son                  |  |
| <b>Naphtha—</b>                           |                  |                                   |  |
| Rotterdam,                                | 3 cks.           | Hutchinson & Son                  |  |
| <b>Paint—</b>                             |                  |                                   |  |
| New York,                                 | 220 cs.          | Wilson, Sons, & Co., Ld.          |  |
| <b>Phosphate—</b>                         |                  |                                   |  |
| Gothenburg,                               | 80 t. 500 bgs.   |                                   |  |

**Phosphorus—**

|                       |            |                          |  |
|-----------------------|------------|--------------------------|--|
| Rouen,                | 2 cs.      | Rawson & Robinson        |  |
| <b>Pitch—</b>         |            |                          |  |
| Amsterdam,            | 25 cks.    | Hutchinson & Son         |  |
| "                     | 14         | W. & C. L. Ringrose      |  |
| Antwerp,              | 40 cs.     | Furley & Co.             |  |
| <b>Saltpetre—</b>     |            |                          |  |
| Hamburg,              | 1 ck.      | Wilson, Sons, & Co., Ld. |  |
| "                     | 5          | Lofthouse & Saltmer      |  |
| <b>Soap—</b>          |            |                          |  |
| Bari,                 | 53 cs.     |                          |  |
| <b>Starch—</b>        |            |                          |  |
| Rotterdam,            | 50 cs.     | Hutchinson & Son         |  |
| Bremen,               | 1,917      | Veltmann & Co.           |  |
| Amsterdam,            | 60         | W. & C. L. Ringrose      |  |
| Antwerp,              | 108        |                          |  |
| <b>Stearine—</b>      |            |                          |  |
| Antwerp,              | 75 bgs.    | Wilson, Sons, & Co., Ld. |  |
| <b>Sulphur—</b>       |            |                          |  |
| Catania,              | 1,102 pks. | Wilson, Sons, & Co., Ld. |  |
| "                     | 1,849      |                          |  |
| <b>Tartaric Acid—</b> |            |                          |  |
| Rotterdam,            | 2 cks.     | Hutchinson & Son         |  |
| <b>Treacle—</b>       |            |                          |  |
| New York,             | 375 brls.  | Wilson, Sons, & Co., Ld. |  |
| <b>Yarnish—</b>       |            |                          |  |
| Hamburg,              | 2 dms.     | Wilson, Sons, & Co., Ld. |  |
| <b>Waste Salt—</b>    |            |                          |  |
| Hamburg,              | 1,500 bgs. |                          |  |
| <b>White Lead—</b>    |            |                          |  |
| Rotterdam,            | 41 cks.    | W. & C. L. Ringrose      |  |
| Amsterdam,            | 51         | W. & C. L. Ringrose      |  |
| Dunkirk,              | 11 brls.   | G. Holmes & Co.          |  |
| <b>Wolfram—</b>       |            |                          |  |
| Hamburg,              | 5 cs.      | Wilson, Sons, & Co., Ld. |  |
| <b>Wood Pulp—</b>     |            |                          |  |
| Hamburg,              | 80 bls.    | Wilson, Sons, & Co., Ld. |  |

**GLASGOW.**

Week ending March 5th.

|                                          |                     |                  |  |
|------------------------------------------|---------------------|------------------|--|
| <b>Acetic Acid—</b>                      |                     |                  |  |
| Rotterdam,                               | 15 cks.             | J. Rankine & Son |  |
| <b>Aniline Colours—</b>                  |                     |                  |  |
| Rotterdam,                               | 9 cks. 11 cs.       | J. Rankine & Son |  |
| <b>Arachide Oil—</b>                     |                     |                  |  |
| Rotterdam,                               | 4 cks.              | J. Rankine & Son |  |
| <b>Asbestos—</b>                         |                     |                  |  |
| Genoa,                                   | 5 cs.               |                  |  |
| <b>Barium Sulphate—</b>                  |                     |                  |  |
| Antwerp,                                 | 250 bgs.            |                  |  |
| <b>Barytes—</b>                          |                     |                  |  |
| Rotterdam,                               | 127 cks.            | J. Rankine & Son |  |
| <b>Chemicals (otherwise undescribed)</b> |                     |                  |  |
| Rotterdam,                               | 2 cks.              | J. Rankine & Son |  |
| <b>Colours—</b>                          |                     |                  |  |
| Rotterdam,                               | 3 brls. 1 ck. 1 cs. | J. Rankine & Son |  |
| Hamburg,                                 | 5                   |                  |  |
| Rotterdam,                               | 21 pks.             |                  |  |

**Dyestuffs—**

|                        |                        |                        |  |
|------------------------|------------------------|------------------------|--|
| <b>Alizarine</b>       |                        |                        |  |
| Rotterdam,             | 24 cks. 1 cs. 15 brls. | J. Rankine & Son       |  |
| "                      | 148 pks.               |                        |  |
| <b>Cutch</b>           |                        |                        |  |
| Rangoon,               | 1,600 bxs.             |                        |  |
| <b>Extracts</b>        |                        |                        |  |
| Antwerp,               | 1 cs. 3 cks.           |                        |  |
| <b>Logwood</b>         |                        |                        |  |
| Bowling,               | 490 t.                 | M. Arthur, Scott & Co. |  |
| <b>Madder</b>          |                        |                        |  |
| Rotterdam,             | 3 cks.                 | J. Rankine & Son       |  |
| <b>Shumac</b>          |                        |                        |  |
| Palermo,               | 60 bls. 450 bgs.       |                        |  |
| <b>Glucose—</b>        |                        |                        |  |
| New York,              | 50 brls.               |                        |  |
| Baltimore,             | 50                     |                        |  |
| <b>Glue—</b>           |                        |                        |  |
| Antwerp,               | 7 cks. 10 bgs.         | J. Rankine & Son       |  |
| Rotterdam,             | 60                     |                        |  |
| <b>Paraffin Wax—</b>   |                        |                        |  |
| Rangoon,               | 640 bxs.               |                        |  |
| <b>Phosphate Rock—</b> |                        |                        |  |
| Bona,                  | 1,000 t.               | A. Cross & Sons        |  |
| <b>Potash—</b>         |                        |                        |  |
| Rotterdam,             | 24 cks.                | J. Rankine & Son       |  |
| <b>Pumice Stone—</b>   |                        |                        |  |
| Leghorn,               | 50 bgs.                |                        |  |
| <b>Rosin—</b>          |                        |                        |  |
| New York,              | 300 brls.              |                        |  |
| <b>Starch—</b>         |                        |                        |  |
| New York,              | 1,000 sks.             |                        |  |
| Antwerp,               | 203 cs.                |                        |  |
| <b>Stearine—</b>       |                        |                        |  |
| Antwerp,               | 13 bgs.                |                        |  |
| <b>Sulphur—</b>        |                        |                        |  |
| Girgenti,              | 500 t.                 |                        |  |
| <b>Tartaric Acid—</b>  |                        |                        |  |
| Messina,               | 20 cks.                | J. Rankine & Son       |  |
| Rotterdam,             | 4                      |                        |  |
| <b>Ultramarine—</b>    |                        |                        |  |
| Antwerp,               | 6 cs.                  |                        |  |
| <b>Wood Pulp—</b>      |                        |                        |  |
| Aalesund,              | 7,000 bls.             |                        |  |
| Christiania,           | 322                    |                        |  |
| Drontheim,             | 1,080                  |                        |  |
| <b>Zinc Oxide—</b>     |                        |                        |  |
| Antwerp,               | 15 cks.                |                        |  |
| New York,              | 50 brls.               |                        |  |
| <b>Zinc White—</b>     |                        |                        |  |
| Rotterdam,             | 15 cks.                | J. Rankine & Son       |  |

**TYNE.**

Week ending February 29th.

|                           |          |                |  |
|---------------------------|----------|----------------|--|
| <b>Alum Earth—</b>        |          |                |  |
| Hamburg,                  | 17 cks.  | Tyne S. S. Co. |  |
| <b>Ammonium Chloride—</b> |          |                |  |
| Rotterdam,                | 10 brls. | Tyne S. S. Co. |  |
| <b>Barytes—</b>           |          |                |  |
| Antwerp,                  | 400 bgs. | Tyne S. S. Co. |  |
| <b>Colours—</b>           |          |                |  |
| Antwerp,                  | 1 brl.   | Tyne S. S. Co. |  |
| <b>Glue—</b>              |          |                |  |
| Antwerp,                  | 2 cks.   | Tyne S. S. Co. |  |
| <b>Limestone—</b>         |          |                |  |
| Antwerp,                  | 2 cs.    | Tyne S. S. Co. |  |
| <b>Phosphate—</b>         |          |                |  |
| Antwerp,                  | 200 bgs. | Tyne S. S. Co. |  |
| <b>Saltpetre—</b>         |          |                |  |
| Hamburg,                  | 2 cks.   | Tyne S. S. Co. |  |

**Starch—**

|                    |                 |                |  |
|--------------------|-----------------|----------------|--|
| Antwerp,           | 160 cs.         | Tyne S. S. Co. |  |
| Rotterdam,         | 102             | "              |  |
| <b>White Lead—</b> |                 |                |  |
| Antwerp,           | 12 cks. 4 brls. | Tyne S. S. Co. |  |
| <b>Wood Pulp—</b>  |                 |                |  |
| Christiania,       | 432 bls.        |                |  |
| Arendal,           | 1,000           |                |  |
| <b>Zinc Oxide—</b> |                 |                |  |
| Antwerp,           | 5 brls.         | Tyne S. S. Co. |  |
| Rotterdam,         | 25 cks.         | "              |  |

**GOOLE.**

Week ending February 26th.

|                                          |            |           |  |
|------------------------------------------|------------|-----------|--|
| <b>Alizarine—</b>                        |            |           |  |
| Rotterdam,                               | 42 brls.   | 1 cs.     |  |
| <b>Alkali—</b>                           |            |           |  |
| Calais,                                  | 10 cks.    |           |  |
| <b>Alum—</b>                             |            |           |  |
| Rotterdam,                               | 7 cks.     |           |  |
| <b>Antimony Sulphide—</b>                |            |           |  |
| Boulogne,                                | 2 cks.     |           |  |
| <b>Barytes—</b>                          |            |           |  |
| Rotterdam,                               | 12 cks.    |           |  |
| <b>Caoutchouc—</b>                       |            |           |  |
| Boulogne,                                | 12 cks.    | 2 cs.     |  |
| Ghent,                                   | 2 bls.     |           |  |
| <b>Colours—</b>                          |            |           |  |
| Hamburg,                                 | 24 cks.    | 17 cs.    |  |
| Ghent,                                   | 14         | 1         |  |
| <b>Dyestuffs (otherwise undescribed)</b> |            |           |  |
| Rotterdam,                               | 469 cks.   | 71 cs.    |  |
| Boulogne,                                | 61         | 20 pks. 5 |  |
| <b>Farina—</b>                           |            |           |  |
| Hamburg,                                 | 204 bgs.   |           |  |
| Delfsdyhl,                               | 469        |           |  |
| <b>Fustic—</b>                           |            |           |  |
| Bremen,                                  | 202 t.     |           |  |
| <b>Glucose—</b>                          |            |           |  |
| Calais,                                  | 100 bgs.   |           |  |
| <b>Logwood—</b>                          |            |           |  |
| Hamburg,                                 | 1,074 pcs. |           |  |
| <b>Madder—</b>                           |            |           |  |
| Rotterdam,                               | 2 cks.     |           |  |
| <b>Potash—</b>                           |            |           |  |
| Rotterdam,                               | 33 cks.    |           |  |
| Dunkirk,                                 | 4          | 30 dms.   |  |
| <b>Saltpetre—</b>                        |            |           |  |
| Antwerp,                                 | 85 bgs.    |           |  |
| Hamburg,                                 | 20 cks.    |           |  |
| <b>Sodium Silicate—</b>                  |            |           |  |
| Rotterdam,                               | 1 ck.      |           |  |
| <b>Waste Salt—</b>                       |            |           |  |
| Hamburg,                                 | 900 bgs.   |           |  |

**GRIMSBY.**

Week ending February 29th.

|                                          |                |    |  |
|------------------------------------------|----------------|----|--|
| <b>Albumen—</b>                          |                |    |  |
| Hamburg,                                 | 8 cks.         |    |  |
| <b>Caoutchouc—</b>                       |                |    |  |
| Antwerp,                                 | 19 cs.         |    |  |
| Hamburg,                                 | 115            |    |  |
| <b>Chemicals (otherwise undescribed)</b> |                |    |  |
| Antwerp,                                 | 10 cs.         |    |  |
| Rotterdam,                               | 34 pks.        |    |  |
| <b>Colours—</b>                          |                |    |  |
| Rotterdam,                               | 1 cs.          |    |  |
| Antwerp,                                 | 7 cks. 2       |    |  |
| Hamburg,                                 | 7              | 57 |  |
| <b>Dyes—</b>                             |                |    |  |
| Antwerp,                                 | 50 cs. 74 pks. |    |  |
| <b>Farina—</b>                           |                |    |  |
| Hamburg,                                 | 200 bgs.       |    |  |
| <b>Starch—</b>                           |                |    |  |
| Antwerp,                                 | 5 cs.          |    |  |
| Hamburg,                                 | 5              |    |  |

**EXPORTS OF CHEMICAL PRODUCTS**

OF

**THE PRINCIPAL PORTS OF THE UNITED KINGDOM.****LONDON.**

Week ending March 4th.

|                |         |      |  |
|----------------|---------|------|--|
| <b>Alkali—</b> |         |      |  |
| London, Ont.,  | 2 c.    | £5   |  |
| Mahé,          | 1 t. 15 | 13   |  |
| <b>Alum—</b>   |         |      |  |
| Salonica,      | 40 t.   | £266 |  |

**Ammonia—**

|                            |            |     |  |
|----------------------------|------------|-----|--|
| Sydney,                    | 15 cyldrs. | £82 |  |
| Gothenburg,                | 25 dms.    | 50  |  |
| <b>Ammonia (Liquid)—</b>   |            |     |  |
| Cape Town,                 | 1 t.       | £39 |  |
| Cologne,                   | 20 cyldrs. | 257 |  |
| <b>Ammonium Carbonate—</b> |            |     |  |
| Cologne,                   | 1 t.       | £35 |  |
| Melbourne,                 | 25 cs.     | 40  |  |

**Ammonium Chloride—**

|               |         |     |  |
|---------------|---------|-----|--|
| Chinde,       | 2 t.    | £80 |  |
| Auckland,     | 1 15 c. | 35  |  |
| Bagdad,       | 1       | 74  |  |
| Bushire,      | 6       | 11  |  |
| Antwerp,      | 9 cks.  | 67  |  |
| Salonica,     | 10 10   | 374 |  |
| Cologne,      | 15      | 105 |  |
| Dusseldorf,   | 7       | 49  |  |
| Newport News, | 31      | 218 |  |

**Ammonium Nitrate—**

|                           |         |       |  |
|---------------------------|---------|-------|--|
| Bilbao,                   | 69 cks. | £303  |  |
| <b>Ammonium Sulphate—</b> |         |       |  |
| Rouen,                    | 15 t.   | £58   |  |
| Ostend,                   | 300     | 2,700 |  |
| Hamburg,                  | 110     | 939   |  |
| Dunkirk,                  | 45      | 405   |  |
| Ghent,                    | 40      | 370   |  |



|                                    |                          |            |
|------------------------------------|--------------------------|------------|
| Bay,                               | 40 dms.                  | £30        |
| Bay,                               | 10 c.                    | 12         |
| <b>Chlorate—</b>                   |                          |            |
| ork,                               | 10 c.                    | £46        |
| <b>Nitrate—</b>                    |                          |            |
| ork,                               | 3 t. 5 c.                | £57        |
| own,                               | 4 c.                     | £11        |
| <b>ic Acid Gas—</b>                |                          |            |
| 10 tubes                           |                          | £4         |
| <b>Soda—</b>                       |                          |            |
| own,                               | 4 c.                     | £6         |
| Bay,                               | 10                       | 20         |
| les,                               | 2 t.                     | 40         |
| a Bay,                             | 1                        | 14         |
| don,                               | 4                        | 16         |
| Kong,                              | 4                        | 0          |
| <b>als (otherwise undescribed)</b> |                          |            |
| ne,                                | 6 cs.                    | £41        |
| me,                                | 10 c.                    | 30         |
| id,                                | 6                        | 48         |
| a,                                 | 2                        | 18         |
| Bay,                               | 10 cks.                  | 44         |
| y,                                 | 3                        | 13         |
| nd,                                | 5                        | 24         |
| ania,                              | 1 t.                     | 51         |
| <b>Acid—</b>                       |                          |            |
| lam,                               | 15 c.                    | £95        |
| dam,                               | 1 ck. 10                 | 5 kgs. 124 |
|                                    | 2                        | 13         |
|                                    | 10                       | 66         |
|                                    | 1                        | 13         |
| ps,                                | 1                        | 34         |
|                                    | 2                        | 11         |
| a,                                 | 2 cs.                    | 25         |
| <b>Products—</b>                   |                          |            |
| ine                                | 5 cks.                   | £90        |
| racene                             | 135 cks.                 | £730       |
| ine                                | 27 crates                | £39        |
| itle,                              | 1 dm.                    | 5          |
| ol                                 |                          |            |
| e,                                 | 24 dms.                  | £325       |
| lam,                               | 90 cks. 30 pns. 201 pks. | 1,535      |
| lets                               |                          |            |
| <b>olic Acid</b>                   |                          |            |
| Bay,                               | 1 ck.                    | £5         |
| own,                               | 4                        | 13         |
| dorf,                              | 80 cks.                  | 555        |
| les,                               | 25                       | 42         |
| <b>note</b>                        |                          |            |
| ork,                               | 500 brls.                | £219       |
| hthaline                           |                          |            |
| elphia,                            | 820 bgs.                 | £173       |
|                                    | 50                       | 27         |
| don,                               | 5 cks.                   | 10         |
| arg,                               | 6                        | 49         |
|                                    | 130                      | 73         |
| h                                  | 300 t.                   | £550       |
| ck,                                | 465                      | 721        |
| a,                                 | 150 brls.                | 71         |
| an,                                | 2,000                    | 3,725      |
| me,                                | 12 brls.                 | £8         |
|                                    | 100 dms.                 | 50         |
|                                    | 10                       | 27         |
| ara,                               | 8                        | 6          |
| <b>Products (otherwise undes.)</b> |                          |            |
| ar,                                | 13½ brls.                | £10        |
| nd,                                | 4 cks.                   | 19         |
| <b>Sulphate—</b>                   |                          |            |
| les,                               | 20 t.                    | £316       |
|                                    | 10                       | 149        |
|                                    | 23                       | 7 c.       |
|                                    | 50                       | 780        |
| ux,                                | 15                       | 242        |
| own,                               | 15                       | 12         |
| a,                                 | 4                        | 70         |
| <b>as—</b>                         |                          |            |
| nd,                                | 21 t. 10 c.              | £40        |
| a,                                 | 63                       | 14         |
| <b>of Tartar—</b>                  |                          |            |
| own,                               | 1 c.                     | £14        |
| in,                                | 4                        | 24         |
| nd,                                | 1 t.                     | 103        |
| me,                                | 20 kgs.                  | 104        |
| Bay,                               | 2                        | 9          |
| <b>stants—</b>                     |                          |            |
| bury,                              | 40 dms.                  | £14        |
|                                    | 31 cks.                  | 28         |
| me,                                | 20 cs.                   | 37         |
| nd,                                | 3 kgs.                   | 8          |
|                                    | 37                       | 75         |
| <b>ts (otherwise undescribed)</b>  |                          |            |
| nd,                                | 1 c.                     | £17        |

|                              |              |            |
|------------------------------|--------------|------------|
| <b>Guano—</b>                |              |            |
| Guadeloupe,                  | 550 t.       | £6,050     |
| Morlaix,                     | 49           | 5 c.       |
| <b>Iodoform—</b>             |              |            |
| Algoa Bay,                   | 1 cs.        | £34        |
| <b>Lead Acetate—</b>         |              |            |
| Melbourne,                   | 10 c.        | £16        |
| <b>Manure—</b>               |              |            |
| Genoa,                       | 50 t.        | £500       |
| Herbice,                     | 20           | 180        |
| Morlaix,                     | 28           | 173        |
| Landerneau,                  | 99           | 14 c.      |
| Port Angel (Mexico),         | 20 t.        | 175        |
| <b>Mercuric Oxide—</b>       |              |            |
| Constantinople,              | 1 ck.        | £67        |
| <b>Nitric Acid—</b>          |              |            |
| Jersey,                      | 40 carboys   | £70        |
| <b>Oxygen—</b>               |              |            |
| Genoa,                       | 1 cs.        | £13        |
| <b>Phosphate—</b>            |              |            |
| Limon,                       | 15 t.        | £131       |
| <b>Potash Salts—</b>         |              |            |
| Demerara,                    | 20 t.        | £195       |
| <b>Potassium Bichromate—</b> |              |            |
| Bombay,                      | 1 t. 10 c.   | £75        |
| <b>Potassium Chlorate—</b>   |              |            |
| Calcutta,                    | 10 c.        | £21        |
| <b>Potassium Cyanide—</b>    |              |            |
| Algoa Bay,                   | 10 t.        | £1,354     |
| Melbourne,                   | 20 bgs.      | 235        |
| Delagoa Bay,                 | 50 cs.       | 653        |
| <b>Potassium Iodide—</b>     |              |            |
| Algoa Bay,                   | 1 cs.        | £32        |
| <b>Potassium Prussiate—</b>  |              |            |
| Antwerp,                     | 1 cs.        | £9         |
| <b>Saltpetre—</b>            |              |            |
| Pernambuco,                  | 5 t.         | £145       |
| Santos,                      | 1            | 2 c.       |
| Auckland,                    | 12           | 14         |
| Melbourne,                   | 1            | 60 kgs. 94 |
| Rio de Janeiro,              | 5            | 14         |
| <b>Sheep Dip—</b>            |              |            |
| Galveston,                   | 2,250 cs.    | £4,500     |
| B. Ayres,                    | 1,500 10 t.  | 5 c.       |
| E. London,                   | 11           | 4          |
| Wellington,                  | 30           | 400        |
| Natal,                       | 2            | 14         |
| Cape Town,                   | 200 drs.     | 50         |
| Algoa Bay,                   | 3            | 7          |
| <b>Soda Ash—</b>             |              |            |
| Rio de Janeiro,              | 18 t. 16 c.  | £70        |
| <b>Soda Salts—</b>           |              |            |
| New York,                    | 7 t. 2 c.    | £100       |
| <b>Sodium Bicarbonate—</b>   |              |            |
| Christiania,                 | 6 c.         | £6         |
| Brisbane,                    | 10           | 6          |
| <b>Strontium Carbonate—</b>  |              |            |
| New York,                    | 1 t. 10 c.   | £50        |
| <b>Strontium Nitrate—</b>    |              |            |
| New York,                    | 11 t. 12 c.  | £280       |
| <b>Sodium Dioxide—</b>       |              |            |
| New York,                    | 5 cks.       | £26        |
| <b>Sulphuric Acid—</b>       |              |            |
| Trincomalee,                 | 3 t. 10 c.   | £25        |
| <b>Superphosphates—</b>      |              |            |
| Martinique,                  | 650 t.       | £1,050     |
| Morlaix,                     | 3            | 19 c.      |
| Hartlingen,                  | 20           | 4          |
| <b>Tartaric Acid—</b>        |              |            |
| Auckland,                    | 6 kgs. 15 c. | £139       |
| Boulogne,                    | 5            | 34         |
| Libau,                       | 3 cks.       | 36         |

LIVERPOOL.

Week ending March 4th.

|                            |            |      |
|----------------------------|------------|------|
| <b>Acetate of Lime—</b>    |            |      |
| Boston,                    | 13 c. 1 q. | £8   |
| <b>Albumen—</b>            |            |      |
| Boston,                    | 5 c. 1 q.  | £27  |
| <b>Alkali—</b>             |            |      |
| Bombay,                    | 1 t.       | £56  |
| <b>Alum—</b>               |            |      |
| B. Ayres,                  | 4 t.       | 1 q. |
| Rio de Janeiro,            | 1          | 3 c. |
| New York,                  | 10         | 3    |
| Portland, M.,              | 14         | 6    |
| <b>Ammonia (Liquid)—</b>   |            |      |
| Colon,                     | 6 c.       | £10  |
| <b>Ammonium Carbonate—</b> |            |      |
| Ancona,                    | 5 c.       | £3   |
| Toronto,                   | 1 t. 10    | 3 q. |
| Sao Paulo,                 | 4          | 3    |
| Montreal,                  | 3          | 5    |
| Hamburg,                   | 15         | 26   |

|                                  |            |          |       |
|----------------------------------|------------|----------|-------|
| Genoa,                           | 1          | 10       | 52    |
| Amsterdam,                       |            | 10       | 18    |
| Odessa,                          | 3          |          | 105   |
| Philadelphia,                    | 4          | 10       | 154   |
| <b>Ammonium Chloride—</b>        |            |          |       |
| Antwerp,                         |            | 10 c.    | £12   |
| St. John's, Nfld.,               | 2 t.       |          | 44    |
| Galatz,                          |            | 10       | 19    |
| Genoa,                           | 20         |          | 301   |
| Venice,                          | 10         | 2        | 157   |
| Odessa,                          | 1          |          | 30    |
| Alexandria,                      | 2          |          | 72    |
| <b>Ammonium Sulphate—</b>        |            |          |       |
| Colombo,                         | 4 t. 2 c.  | 2 q.     | £42   |
| Genoa,                           | 30         | 7        | 325   |
| St. John, N.B.,                  | 3          |          | 27    |
| Demerara,                        | 192        | 6        | 8     |
| Bordeaux,                        | 15         | 2        | 2     |
| Malaga,                          | 4          | 14       | 1     |
| Las Palmas,                      | 25         |          | 219   |
| New York,                        | 25         |          | 226   |
| Cartagena,                       | 10         | 3        | 86    |
| Palermo,                         | 31         | 1        | 256   |
| Bilbao,                          | 4          | 1        | 9     |
| Valencia,                        | 227        | 2        | 5     |
| Boston,                          | 50         | 10       | 506   |
| <b>Arsenic—</b>                  |            |          |       |
| Portland, M.,                    | 2 t. 8 c.  | 3 q.     | £45   |
| <b>Barium Sulphocyanide—</b>     |            |          |       |
| Santos,                          | 4 c.       | 3 q.     | £15   |
| <b>Bleaching Powder—</b>         |            |          |       |
| Alexandria,                      |            | 10 brls. |       |
| Baltimore,                       | 96 cks.    | 155 bxs. |       |
| Easton,                          | 545        |          |       |
| B. Ayres,                        |            | 14       | 16    |
| Genoa,                           | 76         |          |       |
| Ghent,                           | 67         |          |       |
| Malaga,                          | 3          |          |       |
| Naples,                          | 27         |          |       |
| Newport News,                    | 102        |          |       |
| New York,                        | 327        | 85       |       |
| Philadelphia,                    | 30         |          |       |
| Rio de Janeiro,                  |            | 14       |       |
| St. John, N.B.,                  | 2          |          |       |
| San Sebastian,                   | 28         |          |       |
| Valparaiso,                      | 40 cs.     |          |       |
| <b>Boracic Acid—</b>             |            |          |       |
| Bremerhaven,                     | 3 t. 12 c. | 3 q.     | £109  |
| Rotterdam,                       |            | 10       | 17    |
| Yokohama,                        | 3          | 1        | 78    |
| <b>Borax—</b>                    |            |          |       |
| Barcelona,                       | 4 t. 16 c. |          | £96   |
| Brails,                          | 1 ck.      |          |       |
| Galatz,                          | 2          |          | 14    |
| Melbourne,                       | 1          |          | 30    |
| Hamburg,                         | 63         | 5        | 1,265 |
| Ibrail,                          | 6          | 2 q.     | 7     |
| Sao Paulo,                       | 10         |          | 10    |
| Rotterdam,                       | 1          | 12       | 33    |
| <b>Calcium Chloride—</b>         |            |          |       |
| Boston,                          | 26 t. 5 c. |          | £53   |
| Alexandria,                      | 4          | 18       | 11    |
| Rangoon,                         | 2          | 1        | 5     |
| <b>Carbolic Acid—</b>            |            |          |       |
| Sierra Leone,                    | 4 cks.     |          | £16   |
| Hamburg,                         |            | 14 c.    | 42    |
| Baltimore,                       | 5 t.       |          | 295   |
| Calcutta,                        |            | 8 dms.   | 9     |
| New York,                        | 6 cs.      |          | 48    |
| Rotterdam,                       | 5          | 5        | 306   |
| Philadelphia,                    | 36         | 11 cs.   | 3 q.  |
| Hiogo,                           | 5          |          | 158   |
| Odessa,                          | 3          | 6        | 1     |
| Barcelona,                       | 1          |          | 63    |
| Genoa,                           | 19         | 2        | 60    |
| St. John, N.B.,                  | 1 ck.      |          | 10    |
| Yokohama,                        | 14 t. 16   | 1        | 794   |
| Wellington, N.Z.,                | 1          | 4        | 44    |
| <b>Carbolic and Picric Acid—</b> |            |          |       |
| New York,                        | 1 t. 17 c. |          | £117  |
| <b>Caustic Soda—</b>             |            |          |       |
| Alexandria,                      |            | 18 dms.  |       |
| Amsterdam,                       | 293        |          |       |
| Ancona,                          | 20         |          |       |
| Bahia,                           | 130        |          |       |
| Baltimore,                       | 400        | 85 bxs.  |       |
| Barcelona,                       |            | 30 cks.  |       |
| Barranquilla,                    | 30         |          |       |
| Beyrout,                         | 15         |          |       |
| Bilbao,                          | 18         |          |       |
| Bombay,                          | 112        |          |       |
| B. Ayres,                        | 50         |          |       |
| Callao,                          | 160        |          |       |
| Cienfuegos,                      | 16         |          |       |
| Corfu,                           | 30         |          |       |
| Corral,                          | 15         |          |       |
| Corunna,                         |            | 8 brls.  |       |
| Fiume,                           |            | 40       |       |
| Fairwater,                       | 18         |          |       |
| Galatz,                          | 164        |          |       |
| Genoa,                           | 135        |          |       |
| Havana,                          | 50         |          |       |

|                                          |                   |          |
|------------------------------------------|-------------------|----------|
| Hong Kong,                               | 4                 |          |
| Jaffa,                                   | 100               |          |
| La Guayra,                               | 20                |          |
| Malaga,                                  | 125               |          |
| Melbourne,                               | 101               |          |
| Nagasaki,                                | 100               |          |
| N. Orleans,                              | 100               |          |
| New York,                                | 380               | 100      |
| Paris,                                   | 35                |          |
| Pernambuco,                              | 50                |          |
| Philadelphia,                            | 250               |          |
| Rangoon,                                 | 21                |          |
| Rio de Janeiro,                          | 21                |          |
| Rouen,                                   | 7                 |          |
| St. John, N.B.,                          | 103               | 11 bxs.  |
| St. John,                                |                   |          |
| Salaverry,                               | 10                |          |
| Saltello,                                | 35                |          |
| Samarang,                                | 12                |          |
| Savanna,                                 | 30                |          |
| Sydney,                                  | 152               |          |
| Tarragona,                               | 4                 | 71       |
| <b>Chemicals (otherwise undescribed)</b> |                   |          |
| Sierra Leone,                            | 1 ck.             | £6       |
| Boston,                                  | 1 t. 17 c.        | 2 q. 110 |
| Alexandria,                              | 1                 | 38       |
| Rio de Janeiro,                          |                   | 1 kg. 38 |
| Rotterdam,                               |                   | 12       |
| Beyrout,                                 | 1                 | 37       |
| Genoa,                                   | 1                 | 37       |
| Hamburg,                                 | 1                 | 7        |
| Danzig,                                  | 5                 | 10       |
| Stettin,                                 | 1                 | 14       |
| Oporto,                                  | 15                | 26       |
| Philadelphia,                            | 12                | 14       |
| <b>China Clay—</b>                       |                   |          |
| Bombay,                                  | 5 t.              |          |
| Boston,                                  | 108               |          |
| Philadelphia,                            | 102               |          |
| Santos,                                  | 4 cks.            |          |
| <b>Chromic Acid—</b>                     |                   |          |
| Hamburg,                                 | 15 c.             | £48      |
| <b>Citric Acid—</b>                      |                   |          |
| Barbadoes,                               | 5 c.              | £7       |
| <b>Coal Products—</b>                    |                   |          |
| Alizarine                                |                   |          |
| Santos,                                  | 6 cks.            |          |
| <b>Aniline Colours</b>                   |                   |          |
| Barcelona,                               | 2 cs.             |          |
| St. John, N.B.,                          | 5 kgs.            |          |
| <b>Aniline Salts</b>                     |                   |          |
| Boston,                                  | 123 cks. 30 cs.   |          |
| Genoa,                                   | 10                |          |
| New York,                                |                   | 40       |
| Piræus,                                  | 20                |          |
| Rio de Janeiro,                          | 5                 | 2 dms.   |
| Santos,                                  | 1                 |          |
| <b>Anthracene</b>                        |                   |          |
| Rotterdam,                               | 22 cks. 100 brls. |          |
| <b>Creosote Oil</b>                      |                   |          |
| Lisbon,                                  | 450 brls.         |          |
| <b>Naphtha</b>                           |                   |          |
| Trinidad,                                | 1 ck.             |          |
| <b>Pitch</b>                             |                   |          |
| Cette,                                   | 286 t.            |          |
| <b>Tar</b>                               |                   |          |
| B. Ayres,                                | 10 dms.           |          |
| Colombo,                                 |                   | 6 brls.  |
| Galatz,                                  |                   | 25       |
| Genoa,                                   | 2 cks.            |          |
| Honolulu,                                | 75 hf.-brls.      |          |
| <b>Tar Salts</b>                         |                   |          |
| Boston,                                  | 8 cks.            |          |
| <b>Coal Products (otherwise undes.)</b>  |                   |          |
| New York,                                | 20 cs. 36 cks.    |          |
| Sierra Leone,                            | 4                 |          |
| <b>Copper Sulphate—</b>                  |                   |          |
| Odessa,                                  | 63 t. 18 c.       | £936     |
| Seville,                                 | 13                | 2        |
| Paris,                                   | 21                | 17       |
| Catania,                                 | 18                | 3        |
| Boston,                                  | 23                | 9        |
| Ancona,                                  | 4                 | 19       |
| Barl,                                    | 124               | 14       |
| Marseilles,                              | 100               | 2,400    |
| Fiume,                                   | 2                 | 17       |
| Trieste,                                 | 6                 | 19       |
| Varna,                                   | 10                | 8        |
| Sydney,                                  | 1                 | 16       |
| Palermo,                                 | 10                | 16       |
| Nantes,                                  | 9                 | 155      |
| Naples,                                  | 75                | 16       |
| Leghorn,                                 | 67                | 5        |
| Genoa,                                   | 56                | 7        |
| Bordeaux,                                | 344               | 2        |
| Oporto,                                  | 10                | 3        |
| Catania,                                 | 4                 | 2        |
| Naples,                                  | 7                 | 2        |
| Palermo,                                 | 12                | 2        |
| Cadiz,                                   | 2                 | 36       |
| Vigo,                                    | 55                | 860      |
| Rouen,                                   | 26                | 13       |
| Venice,                                  | 37                | 5        |



|                              |                   |      |           |  |
|------------------------------|-------------------|------|-----------|--|
| <b>Copperas—</b>             |                   |      |           |  |
| Calcutta,                    | 17 t. 16 c.       | 1 q. | £36       |  |
| <b>Dried Blood—</b>          |                   |      |           |  |
| Nantes,                      | 25 t. 8 c.        | 2 q. | £191      |  |
| Las Palmas,                  | 11 16             |      | 79        |  |
| <b>Gelatine—</b>             |                   |      |           |  |
| Boston,                      | 200 bxs.          |      |           |  |
| M. Video,                    | 2 cs.             |      |           |  |
| New York,                    | 80                |      |           |  |
| <b>Gypsum—</b>               |                   |      |           |  |
| New York,                    | 37 t. 5 c.        |      | £119      |  |
| <b>Hydrochloric Acid—</b>    |                   |      |           |  |
| San Juan,                    | 1 t. 2 c.         | 2 q. | £15       |  |
| <b>Magnesium Chloride—</b>   |                   |      |           |  |
| Bombay,                      | 15 t. 5 c.        |      | £37       |  |
| Paris,                       | 5 2               |      | 13        |  |
| <b>Manure—</b>               |                   |      |           |  |
| Havre,                       | 350 t. 1 c.       |      | £930      |  |
| Valencia,                    | 77 16             | 1 q. | 255       |  |
| Madeira,                     | 25                |      | 161       |  |
| Gd. Canary,                  | 10                |      | 88        |  |
| Antwerp,                     | 9 17              |      | 171       |  |
| Marseilles,                  | 33 1              |      | 735       |  |
| St. Nazaire,                 | 272 6             | 1    | 1,141     |  |
| Landerneau,                  | 213 5             | 4    | 21        |  |
| Las Palmas,                  | 4                 |      | 997       |  |
| Genoa,                       | 295 2             | 4    |           |  |
| <b>Oxalic Acid—</b>          |                   |      |           |  |
| Rio de Janeiro,              | 4 c.              |      | £5        |  |
| <b>Paint—</b>                |                   |      |           |  |
| Arrecife,                    | 2 cks.            |      |           |  |
| Antwerp,                     | 3 21 kgs. 5 dms.  |      |           |  |
| Barcelona,                   | 100               |      |           |  |
| B. Ayres,                    |                   |      | 48        |  |
| Cameroon,                    | 60                |      |           |  |
| Cartagena,                   | 475 5             |      |           |  |
| Constantinople,              | 240               |      |           |  |
| Curacao,                     | 30                |      |           |  |
| Dakar,                       | 300               |      |           |  |
| Gibraltar,                   | 15                |      |           |  |
| Half Jack,                   | 1                 |      | 1 brl.    |  |
| Havana,                      | 10 cs.            |      |           |  |
| La Plata,                    | 9                 |      |           |  |
| Marseilles,                  | 1                 |      | 4 pks.    |  |
| Mayaguez,                    | 11                |      |           |  |
| New York,                    | 4                 |      | 225 brls. |  |
| Ponce,                       | 2                 |      |           |  |
| Porto Alegre,                | 2                 |      |           |  |
| Rotterdam,                   |                   |      | 2 dms.    |  |
| St. Domingo,                 | 2                 |      |           |  |
| St. Thomas, W.I.,            | 2                 |      |           |  |
| San Juan, P.R.,              | 2                 |      | 10 cs.    |  |
| Valparaiso,                  | 30 25             |      | 8         |  |
| 35 brls. 128 pks.            |                   |      |           |  |
| Vera Cruz,                   | 27                |      | 41        |  |
| <b>Painters' Colours—</b>    |                   |      |           |  |
| Alexandria,                  |                   |      | 25 brls.  |  |
| Antwerp,                     | 8 cks.            |      |           |  |
| Barcelona,                   |                   |      | 11        |  |
| Bilbao,                      | 20                |      |           |  |
| Bombay,                      | 2 429 kgs. 32 cs. |      |           |  |
| B. Ayres,                    | 20                |      | 88        |  |
| Calcutta,                    |                   |      | 5         |  |
| Cape Town,                   | 30 pks.           |      | 20        |  |
| Constantinople,              | 1 brl.            |      | 2 dms.    |  |
| Degama,                      | 8 pks.            |      |           |  |
| Genoa,                       | 30                |      | 3         |  |
| Ghent,                       | 3 cks.            |      |           |  |
| Gd. Bassam,                  | 1 brl. 1          |      | 2         |  |
| Hainburg,                    | 2                 |      | 75        |  |
| Hong Kong,                   | 25                |      | 73 tcs.   |  |
| Lagos,                       | 2                 |      |           |  |
| Lahou,                       |                   |      | 19        |  |
| Lisbon,                      | 21                |      | 8 cs.     |  |
| Melbourne,                   | 7                 |      | 40        |  |
| Newport News,                | 25                |      |           |  |
| New York,                    |                   |      | 4         |  |
| Old Calabar,                 | 21                |      | 2 lxs.    |  |
| Opobo,                       | 7                 |      | 1         |  |
| Para,                        | 5 brls.           |      | 6 tcs.    |  |
| Ponce,                       | 5                 |      |           |  |
| Portland, M.,                | 4                 |      |           |  |
| Rio de Janeiro,              | 20                |      |           |  |
| Santos,                      | 1                 |      |           |  |
| Valparaiso,                  |                   |      | 4 cs.     |  |
| Victoria, W.C.A.,            | 16                |      | 2 brls.   |  |
| Wellington,                  | 315 pks.          |      |           |  |
| <b>Paraffin Wax—</b>         |                   |      |           |  |
| Pernambuco,                  | 10 cs.            |      |           |  |
| <b>Phosphate—</b>            |                   |      |           |  |
| Ibrail,                      | 1 t.              |      | £16       |  |
| <b>Picric Acid—</b>          |                   |      |           |  |
| Rangoon,                     | 8 c.              |      | £27       |  |
| <b>Potassium Bichromate—</b> |                   |      |           |  |
| Rouen,                       | 3 t.              |      | £110      |  |
| Calcutta,                    | 5 c.              |      | 11        |  |
| <b>Potassium Carbonate—</b>  |                   |      |           |  |
| Boston,                      | 17 t. 16 c.       |      | £313      |  |
| <b>Potassium Chlorate—</b>   |                   |      |           |  |
| Kalmar,                      | 1 t.              |      | £40       |  |
| Rio de Janeiro,              | 4 c.              |      | 9         |  |
| Konigsberg,                  | 1                 |      | 40        |  |

|                             |                 |             |  |
|-----------------------------|-----------------|-------------|--|
| Calcutta,                   | 7               | 15          |  |
| Rotterdam,                  | 10              | 22          |  |
| Stettin,                    | 10              | 395         |  |
| Melbourne,                  | 2 3             | 80          |  |
| Hiojo,                      | 8 15            | 342         |  |
| Ode-sa,                     | 3               | 131         |  |
| <b>Newport News,</b>        | 1               | 40          |  |
| E. London,                  | 12              | 23          |  |
| Shanghai,                   | 6 10            | 254         |  |
| Philadelphia,               | 5               | 188         |  |
| Gothenburg,                 | 9               | 349         |  |
| Leghorn,                    | 1               | 39          |  |
| Boston,                     | 2 10            | 98          |  |
| Corunna,                    | 1               | 42          |  |
| New York,                   | 14 15           | 525         |  |
| <b>Potassium Prussiate—</b> |                 |             |  |
| Santos,                     | 1 t. 4 c.       | £176        |  |
| <b>Potassium Sulphate—</b>  |                 |             |  |
| Bordeaux,                   | 2 t. 5 c.       | £25         |  |
| <b>Salt—</b>                |                 |             |  |
| Adelaide,                   | 14 c.           |             |  |
| Antwerp,                    | 230 t. 16       |             |  |
| Black River,                | 17              |             |  |
| Boston,                     | 220             |             |  |
| B. Ayres,                   | 16              |             |  |
| Calcutta,                   | 871             |             |  |
| Cameroon,                   | 25 2            |             |  |
| Cape Coast,                 | 10              |             |  |
| Conakry,                    | 35              |             |  |
| Degama,                     | 100             |             |  |
| E. London,                  | 16              |             |  |
| Ghent,                      | 50              |             |  |
| Gd. Bassa,                  | 13 9            |             |  |
| Guayaquil,                  | 60              |             |  |
| Manaos,                     | 15 12           |             |  |
| Melbourne,                  | 25              |             |  |
| Monrovia,                   | 30              |             |  |
| Mussera,                    | 7 17            |             |  |
| N. Orleans,                 | 500             |             |  |
| Newport News,               | 30              |             |  |
| Old Calabar,                | 20              |             |  |
| Portland, M.,               | 65              |             |  |
| Porto Novo,                 | 25              |             |  |
| Rotterdam,                  | 317             |             |  |
| St. John, N.B.,             | 85 10           |             |  |
| Sierra Leone,               | 75              |             |  |
| Valparaiso,                 | 2 10            |             |  |
| Yarmouth,                   | 10              |             |  |
| <b>Salt Cake—</b>           |                 |             |  |
| Baltimore,                  | 605 t. 3 c.     | £789        |  |
| <b>Saltpetre—</b>           |                 |             |  |
| Bahia,                      | 5 c.            | £7          |  |
| <b>Sheep Dip—</b>           |                 |             |  |
| B. Ayres,                   | 8 t. 18 c. 2 q. | £250        |  |
| St. John, N.B.,             | 1 ck.           | 3           |  |
| <b>Soap—</b>                |                 |             |  |
| Addah,                      | 50 bxs.         |             |  |
| Alexandria,                 | 10              | 53 cs.      |  |
| Algoa Bay,                  |                 | 13 bds.     |  |
| Ambrizette,                 | 40              |             |  |
| Antigua,                    | 100             |             |  |
| Amsterdam,                  | 50              |             |  |
| Antwerp,                    |                 | 105         |  |
| Bahia,                      | 140             |             |  |
| Baltimore,                  | 30              | 1           |  |
| Barbadoes,                  |                 | 200         |  |
| Bombay,                     | 500             | 92          |  |
| Boston,                     |                 | 20 cks.     |  |
| Cabenda,                    |                 | 30          |  |
| Cape Town,                  |                 | 206         |  |
| Cartagena,                  |                 | 3           |  |
| Chama,                      | 180             |             |  |
| Colon,                      |                 | 4           |  |
| Conakry,                    | 80              |             |  |
| Curacao,                    | 100             |             |  |
| Delagoa Bay,                | 30              | 305         |  |
| E. London,                  | 100             | 14 bds. 835 |  |
| Eten,                       |                 | 17 kgs.     |  |
| Fuertaventura,              | 135             |             |  |
| Genoa,                      | 25              |             |  |
| Ghent,                      |                 | 25 crts.    |  |
| Gibraltar,                  | 181             | 73          |  |
| Gd. Bassam,                 |                 | 81          |  |
| Guayaquil,                  |                 | 54          |  |
| Havre,                      | 450             | 250         |  |
| Hong Kong,                  | 600             |             |  |
| Lagos,                      | 56              |             |  |
| Las Palmas,                 | 1,383           | 996         |  |
| Malta,                      |                 | 20          |  |
| Manaos,                     |                 |             |  |
| New York,                   | 655             | 33          |  |
| Para,                       | 20              | 50 bds.     |  |
| Parahyba,                   | 50              |             |  |
| Penang,                     |                 | 5           |  |
| Philadelphia,               |                 | 1           |  |
| Pireus,                     |                 | 10          |  |
| Pt. Elizabeth,              | 500             |             |  |
| Pt. Natal,                  | 203             |             |  |
| Punta Arenas,               | 75              |             |  |
| Rangoon,                    |                 | 2           |  |
| Rotterdam,                  |                 | 440         |  |
| S. John, N.B.,              |                 | 1           |  |
| St. Lucia,                  | 50              |             |  |

|                             |               |            |  |
|-----------------------------|---------------|------------|--|
| Savannah La Mar,            | 170           |            |  |
| Shanghai,                   |               | 2,000      |  |
| Singapore,                  |               | 10         |  |
| Smyrna,                     | 40            |            |  |
| Sydney,                     |               | 3,000      |  |
| Syria,                      |               | 25 bds.    |  |
| Teneriffe,                  | 424           |            |  |
| Trinidad,                   | 1,250         | 250        |  |
| Valparaiso,                 | 50 kgs.       | 25         |  |
| Volo,                       |               | 60 bds.    |  |
| Warri,                      |               | 350        |  |
| <b>Soda—</b>                |               |            |  |
| Boston,                     | 15 cks.       |            |  |
| Corunna,                    | 8 brls.       |            |  |
| Rio de Janeiro,             | 10 kgs.       |            |  |
| <b>Soda Alkali—</b>         |               |            |  |
| Boston,                     | 25 cks.       |            |  |
| Callao,                     | 35 brls.      |            |  |
| Galatz,                     | 20            |            |  |
| Genoa,                      | 200           |            |  |
| Odessa,                     | 35            |            |  |
| Toronto,                    | 35            |            |  |
| <b>Soda Ash—</b>            |               |            |  |
| Antwerp,                    | 150 bgs.      |            |  |
| Avally,                     |               | 100 brls.  |  |
| Baltimore,                  | 1,768 61 cks. | 66 cs.     |  |
| Beyrout,                    |               | 75         |  |
| Bombay,                     |               | 28         |  |
| Boston,                     | 195 tcs. 880  |            |  |
| B. Ayres,                   |               | 80 100     |  |
| Ghent,                      | 300           |            |  |
| Gothenburg,                 | 50 5          |            |  |
| Hong Kong,                  |               | 48         |  |
| Leghorn,                    |               | 12         |  |
| M. Video,                   |               | 40         |  |
| New York,                   | 3,658 50      | 202 tcs.   |  |
| 250 dms.                    |               |            |  |
| Philadelphia,               | 5 604 120     | 589        |  |
|                             |               | 500 brls.  |  |
| Pimental,                   |               | 10         |  |
| Rio de Janeiro,             |               | 245        |  |
| Rotterdam,                  | 100           |            |  |
| Smyrna,                     | 150           | 10         |  |
| Syria,                      |               | 5          |  |
| Talcabuan,                  | 20 kgs.       |            |  |
| Tampico,                    |               | 25 dms     |  |
| Yokohama,                   |               | 836 cks.   |  |
| <b>Soda Crystals—</b>       |               |            |  |
| Bombay,                     | 300 kgs.      |            |  |
| Boston,                     |               | 280 brls.  |  |
| Braila,                     |               | 30         |  |
| Malta,                      | 55            | 65         |  |
| N. Orleans,                 |               | 140 cks.   |  |
| Portland, Me.,              | 100           |            |  |
| St. John, N.B.,             | 40            |            |  |
| Bahia,                      |               | 20         |  |
| Lisbon,                     |               | 1          |  |
| New York,                   | 450           |            |  |
| <b>Sodium Acetate—</b>      |               |            |  |
| Santos,                     | 1 ck.         |            |  |
| <b>Sodium Arseniate—</b>    |               |            |  |
| New York,                   | 10 cks.       |            |  |
| Santos,                     | 4             |            |  |
| <b>Sodium Bicarbonate—</b>  |               |            |  |
| Antwerp,                    | 4 cks.        | 15 kgs.    |  |
| Barcelona,                  |               | 95         |  |
| Beyrout,                    |               | 20         |  |
| Bombay,                     |               | 80         |  |
| Bordeaux,                   |               | 5 brls. 10 |  |
| B. Ayres,                   | 25            |            |  |
| Cairo,                      |               | 40         |  |
| Copenhagen,                 | 25            | 100        |  |
| Danzig,                     |               | 115        |  |
| Hamburg,                    | 22 5          | 210        |  |
| Jaffa,                      |               | 8          |  |
| Melbourne,                  | 121           |            |  |
| Odessa,                     |               | 450        |  |
| Palermo,                    |               | 10         |  |
| Paris,                      |               | 105        |  |
| Portland, Me.,              | 40            | 100        |  |
| Pt. Natal,                  |               | 300        |  |
| Rangoon,                    | 14            |            |  |
| Sydney,                     | 10            | 20         |  |
| Valencia,                   |               | 175        |  |
| <b>Sodium Bichromate—</b>   |               |            |  |
| Rotterdam,                  | 6 cks.        |            |  |
| Stettin,                    | 20 kgs.       |            |  |
| <b>Sodium Carbonate—</b>    |               |            |  |
| Boston,                     | 56 brls.      |            |  |
| <b>Sodium Chlorate—</b>     |               |            |  |
| New York,                   | 45 kgs.       |            |  |
| Philadelphia,               | 100           |            |  |
| Rotterdam,                  | 30            |            |  |
| Santos,                     | 1 ck.         |            |  |
| <b>Sodium Hyposulphate—</b> |               |            |  |
| Valparaiso,                 | 60 kgs.       |            |  |
| <b>Sodium Nitrate—</b>      |               |            |  |
| Bordeaux,                   | 20 cks.       |            |  |
| <b>Sodium Silicate—</b>     |               |            |  |
| Barcelona,                  | 50 cks.       |            |  |
| Bilbao,                     |               | 20 brls.   |  |
| Bombay,                     | 15            |            |  |
| Calcutta,                   | 16            |            |  |

|                         |           |       |
|-------------------------|-----------|-------|
| Gothenburg,             | 5         |       |
| La Guayra,              | 6         |       |
| Mexico,                 | 30        |       |
| Oporto,                 | 15        |       |
| Sydney,                 | 22        | 14 d. |
| Tunis,                  | 10        |       |
| Valencia,               | 600 bgs.  |       |
| Yokohama,               | 5         |       |
| <b>Sodium Sulphate—</b> |           |       |
| Portland, Me.,          | 20 cks.   |       |
| Parahyba,               | 15 dms.   |       |
| <b>Starch—</b>          |           |       |
| Lagos,                  | 1 cs.     |       |
| <b>Sulphur—</b>         |           |       |
| Boston,                 | 250 t.    | 10 c. |
| St. John, N.B.,         | 95        | 1     |
| Halifax,                | 50        | 2     |
| Portland, Or.,          | 40        | 1     |
| <b>Sulphuric Acid—</b>  |           |       |
| Rio Grande,             |           | 16 c. |
| Coquimbo,               | 453 glns. |       |
| <b>Superphosphates—</b> |           |       |
| Barcelona,              | 58 t.     | 5 c.  |
| Bordeaux,               | 123       | 1     |
| Las Palmas,             | 15        |       |
| Valencia,               | 100       | 8 4   |
| <b>Tin Crystals—</b>    |           |       |
| Boston,                 | 1 t.      | 10 c. |
| <b>Turpentine—</b>      |           |       |
| Alexandria,             | 1 t.      | 8 c.  |
| Bombay,                 |           | 12    |
| <b>Varnish—</b>         |           |       |
| Calcutta,               | 20 brls.  |       |
| Genoa,                  | 6 cks.    |       |
| New York,               | 2         |       |
| San Jose De             |           |       |
| Guatemala,              |           | 2 cs. |
| Santos,                 |           | 6     |
| Seville,                | 7         |       |
| Valparaiso,             | 12        |       |
| Vera Cruz,              | 3         |       |
| <b>White Lead—</b>      |           |       |
| Belize,                 | 50 kgs.   |       |
| <b>Zinc Chloride—</b>   |           |       |
| Bombay,                 | 3 t.      | 4 c.  |

**MANCHESTER**

*Week ending March 4*

|                                   |           |  |
|-----------------------------------|-----------|--|
| <b>Alum—</b>                      |           |  |
| Rio de Janeiro,                   | 3 cks.    |  |
| <b>Ammonium Sulphate—</b>         |           |  |
| Hamburg,                          | 488 bgs.  |  |
| Ghent,                            | 985       |  |
| Valencia,                         | 725       |  |
| <b>Aniline Colours—</b>           |           |  |
| Bombay,                           | 3 cs.     |  |
| Rotterdam,                        | 2 cks.    |  |
| <b>Aniline Dyes—</b>              |           |  |
| Rotterdam,                        | 14 cks.   |  |
| <b>Aniline Oil—</b>               |           |  |
| Hamburg,                          | 5 dms.    |  |
| Rotterdam,                        | 1         |  |
| <b>Aniline Salt—</b>              |           |  |
| Hamburg,                          | 7 cks.    |  |
| Rotterdam,                        | 1 pn.     |  |
| <b>Bleaching Powder—</b>          |           |  |
| Rio de Janeiro,                   | 6 cs.     |  |
| <b>Carbolic Acid—</b>             |           |  |
| Treport,                          | 200 bils. |  |
| <b>Caustic Soda—</b>              |           |  |
| Rio de Janeiro,                   | 8 dms.    |  |
| <b>Chemicals (otherwise und)</b>  |           |  |
| Bombay,                           | 8 cks.    |  |
| Barcelona,                        | 7         |  |
| Hamburg,                          | 10 kgs.   |  |
| Rotterdam,                        | 2         |  |
| <b>Coal Products (otherwise u</b> |           |  |
| Barcelona,                        | 10 cks.   |  |
| Hamburg,                          | 7 brls.   |  |
| <b>Colours—</b>                   |           |  |
| Rouen,                            | 2 cks.    |  |
| <b>Copper Sulphate—</b>           |           |  |
| Rio de Janeiro,                   | 1 ck.     |  |
| Treport,                          | 21        |  |
| <b>Creosote Salts—</b>            |           |  |
| Treport,                          | 29 cks.   |  |
| <b>Dyestuffs (otherwise und</b>   |           |  |
| Rio de Janeiro,                   | 5 kgs.    |  |
| <b>Extracts—</b>                  |           |  |
| Rouen,                            | 8 cks.    |  |
| <b>Glue—</b>                      |           |  |
| Rotterdam,                        | 12 cks.   |  |
| <b>Lead Acetate—</b>              |           |  |
| Rio de Janeiro,                   | 2 cks.    |  |



|                                      |                 |
|--------------------------------------|-----------------|
| erp,                                 | 50 bgs.         |
| <b>ium Bichromate—</b>               |                 |
| le Janeiro,                          | 1 ck.           |
| le Janeiro,                          | 2 brls.         |
| <b>m Bicarbonate—</b>                |                 |
| rt,                                  | 42 kgs.         |
| <b>uric Acid—</b>                    |                 |
| le Janeiro,                          | 25 cs.          |
| <b>W—</b>                            |                 |
| rdam,                                | 5 cks.          |
| le Janeiro,                          | 6 cs.           |
| <b>il—</b>                           |                 |
| burg,                                | 20 dms.         |
| rdam,                                | 40              |
| <b>HULL.</b>                         |                 |
| <i>Week ending February 29th.</i>    |                 |
| en,                                  | 2 cks.          |
| es,                                  | 23              |
| <b>onium Sulphate—</b>               |                 |
| irk,                                 | 677 bgs.        |
| t,                                   | 584             |
| rdam,                                | 500             |
| <b>il—</b>                           |                 |
| rdam,                                | 47 pks.         |
| <b>ic Soda—</b>                      |                 |
| erp,                                 | 12 dms.         |
| ni,                                  | 4               |
| to,                                  | 15 cks.         |
| <b>icals (otherwise undescribed)</b> |                 |
| ndria,                               | 200 cks. 8 pks. |
| phagen,                              | 23              |
| stania,                              | 848 lbs. 3 cs.  |
| ig,                                  | 6               |
| heim,                                | 10              |
| en,                                  | 68 cks. 10      |
| burg,                                | 2 9 20          |
| to,                                  | 37 125          |
| burg,                                | 4               |
| illies,                              | 25              |
| York,                                | 73              |
| rdam,                                | 10              |
| <b>lseed Oil—</b>                    |                 |
| rdam,                                | 1,203 c.        |
| erp,                                 | 7,506           |
| en,                                  | 959             |
| ie,                                  | 80              |
| en,                                  | 70              |
| burg,                                | 450             |
| orn,                                 | 204             |
| illies,                              | 2,471           |
| rdam,                                | 1,095           |
| in,                                  | 100             |
| te,                                  | 196             |
| <b>ote—</b>                          |                 |
| phagen,                              | 30 cks.         |
| <b>tuffs (otherwise undescribed)</b> |                 |
| burg,                                | 3 cks.          |
| il,                                  | 4 cs.           |
| en,                                  | 5 pks.          |
| <b>ed Oil—</b>                       |                 |
| ndria,                               | 59 c.           |
| erp,                                 | 134             |
| und,                                 | 7               |
| en,                                  | 53              |
| tiansund,                            | 62              |
| tiansand,                            | 18              |
| phagen,                              | 49              |
| tiania,                              | 178             |
| heim,                                | 216             |
| burg,                                | 659             |
| rdam,                                | 84              |
| nger,                                | 41              |
| le,                                  | 127             |
| <b>re—</b>                           |                 |
| en,                                  | 300 bgs.        |
| ie,                                  | 760 t.          |
| irk,                                 | 252 sks.        |
| <b>ers' Colours—</b>                 |                 |
| ndria,                               | 60 pks.         |
| rdam,                                | 15 cks. 5 cs. 4 |
| erp,                                 | 10 88           |
| en,                                  | 1               |
| n,                                   | 8 dms. 6 1      |
| phagen,                              | 10 11 2         |
| tiania,                              | 1 4 48          |
| irk,                                 | 3 2             |
| e,                                   | 4               |
| u,                                   | 21              |
| en,                                  | 1 2 dms.        |
| t,                                   | 24              |
| o,                                   | 1               |

|                      |              |
|----------------------|--------------|
| Harlingen,           | 1 pk.        |
| Hamburg,             | 1 dm. 26 1 2 |
| Marseilles,          | 16           |
| Naples,              | 1            |
| New York,            | 57           |
| Odessa,              | 139          |
| Palermo,             | 25           |
| Rotterdam,           | 16 1 100     |
| 22 dms.              |              |
| Rouen,               | 5            |
| Stettin,             | 3            |
| <b>Paraffin Wax—</b> |              |
| Reval,               | 50 bgs.      |
| <b>Pitch—</b>        |              |
| Antwerp,             | 310 t.       |
| Dunkirk,             | 230          |
| Leghorn,             | 80           |
| Odessa,              | 175 cks.     |
| <b>Starch—</b>       |              |
| Copenhagen,          | 50 cs.       |
| <b>Tallow—</b>       |              |
| Amsterdam,           | 1 kg.        |
| <b>Tar—</b>          |              |
| Alexandria,          | 1 ck.        |
| Amsterdam,           | 11           |
| Bremen,              | 5            |
| Konigsberg,          | 5            |
| Rotterdam,           | 5            |
| <b>Turpentine—</b>   |              |
| Alexandria,          | 5 cks        |
| <b>Varnish—</b>      |              |
| Alexandria,          | 1 1 dm.      |
| Antwerp,             | 9 1 cs.      |
| Dunkirk,             | 5            |
| Gothenburg,          | 5            |
| Ghent,               | 2            |
| Hamburg,             | 3 2          |
| Rotterdam,           | 2            |
| <b>Waste Salt—</b>   |              |
| Leghorn,             | 10 brls.     |

**GLASGOW.**

*Week ending March 5th.*

|                                          |             |
|------------------------------------------|-------------|
| <b>Alum Cake—</b>                        |             |
| Dunedin,                                 | 7 t. 15 c.  |
| <b>Ammonium Sulphate—</b>                |             |
| Bordeaux,                                | 10 t.       |
| Barbadoes,                               | 152 18 c.   |
| France,                                  | 503 3       |
| Palermo,                                 | 10 6        |
| Hamburg,                                 | 101         |
| <b>Bleaching Powder—</b>                 |             |
| Sydney,                                  | 3 t. 14 c.  |
| <b>Caustic Soda—</b>                     |             |
| Seville,                                 | 20 t. 8½ c. |
| Dunedin,                                 | 10 3        |
| <b>Chemicals (otherwise undescribed)</b> |             |
| Rotterdam,                               | £94         |
| <b>Coal Products—</b>                    |             |
| <b>Aniline Dye</b>                       |             |
| Calcutta,                                | £37         |
| <b>Creosote</b>                          |             |
| Bordeaux,                                | 224 t.      |
| <b>Creosote Oil</b>                      |             |
| U.S.A.,                                  | £588        |
| Vera Cruz,                               | 34          |
| Hamburg,                                 | 45          |
| <b>Naphtha</b>                           |             |
| Bordeaux,                                | 2 t. 2 c.   |
| France,                                  | 2 t. 18 c.  |
| Dunedin,                                 | £290        |
| <b>Pitch</b>                             |             |
| Madras,                                  | £56         |
| U.S.A.,                                  | 246         |
| Bordeaux,                                | 820 t.      |
| France,                                  | 1,700       |
| Genoa,                                   | 173         |
| Spezia,                                  | 2,089       |
| Hamburg,                                 | 100         |
| Bombay,                                  | 282         |
| <b>Tar</b>                               |             |
| Calcutta,                                | £312        |
| Madras,                                  | 62          |
| Bombay,                                  | 23          |
| <b>Coal Products (otherwise undes.)—</b> |             |
| Rotterdam,                               | £490        |
| <b>Extracts—</b>                         |             |
| Boston,                                  | £133        |
| Christiania,                             | 8           |
| Dunedin,                                 | 39          |
| <b>Gelatine—</b>                         |             |
| U.S.A.,                                  | £1,042      |
| Dunedin,                                 | 25          |
| <b>Hydrochloric Acid—</b>                |             |
| Trinidad,                                | £25         |
| <b>Lead Nitrate—</b>                     |             |
| Genoa,                                   | 3 t. 6¾ c.  |

|                     |           |
|---------------------|-----------|
| <b>Linseed Oil—</b> |           |
| Sydney,             | 2 L. 5 c. |
| Canada,             | 14½       |
| Demerara,           | 2         |
| Natal,              | 3 18      |
| Trinidad,           | 1 5¼      |
| Dunedin,            | 9 9       |
| Wellington,         | 2 3       |

**Logwood—**

|           |     |
|-----------|-----|
| Auckland, | £32 |
| Dunedin,  | 70  |

**Magnesium Sulphate—**

|         |     |
|---------|-----|
| Sydney, | £47 |
|---------|-----|

**Manganese—**

|        |             |
|--------|-------------|
| Basle, | 11 t. 13 c. |
|--------|-------------|

**Manure—**

|          |       |
|----------|-------|
| Jamaica, | 10 t. |
|----------|-------|

**Paint—**

|         |     |
|---------|-----|
| Canada, | £25 |
|---------|-----|

**Painters' Colours—**

|                |           |
|----------------|-----------|
| Calcutta,      | £637      |
| Hobart,        | 179       |
| Madras,        | 61        |
| Pt. Elisabeth, | 56        |
| Sydney,        | 1,154     |
| Algoa Bay,     | 20        |
| Cape Town,     | 25        |
| E. London,     | 23        |
| Kingston,      | 95        |
| Natal,         | 32        |
| U.S.A.,        | 150       |
| Auckland,      | £78, 104. |
| Bombay,        | £280      |
| Christchurch,  | 146       |
| Dunedin,       | 744       |
| Wellington,    | 31        |
| Durban,        | 26        |

**Paraffin Wax—**

|            |     |
|------------|-----|
| Cape Town, | £53 |
| Genoa,     | 834 |
| Leghorn,   | 521 |

**Phosphate—**

|          |       |
|----------|-------|
| Palermo, | 10 t. |
|----------|-------|

**Potassium Bichromate—**

|            |      |
|------------|------|
| Boston,    | £339 |
| Genoa,     | 610  |
| Yokohama,  | 905  |
| Rotterdam, | 397  |
| Dunedin,   | 37   |

**Potassium Chloride—**

|          |     |
|----------|-----|
| Palermo, | £38 |
|----------|-----|

**Potassium Prussiate—**

|            |            |
|------------|------------|
| Cette,     | 5 t. 6¾ c. |
| Yokohama,  | 10         |
| Amsterdam, | £27        |

**Rosin—**

|                     |      |
|---------------------|------|
| B. Ayres,           | £100 |
| Argentine Republic, | 590  |

**Saltpetre—**

|         |      |
|---------|------|
| Canada, | £100 |
|---------|------|

**Sheep Dip—**

|           |      |
|-----------|------|
| B. Ayres, | £142 |
|-----------|------|

**Soap—**

|              |            |
|--------------|------------|
| Delagoa Bay, | 2 t. 9¾ c. |
| E. London,   | 4 12       |
| Grenada,     | 3 18½      |
| Curacao,     | 1 9¾       |

**Sodium Bichromate—**

|           |            |
|-----------|------------|
| New York, | 4 t. 14 c. |
| Genoa,    | 28 7¾      |
| Leghorn,  | 1 4¾       |

**Tallow—**

|            |            |
|------------|------------|
| Rotterdam, | 18 t. 4 c. |
|------------|------------|

**Treacle—**

|              |             |
|--------------|-------------|
| Algoa Bay,   | £24         |
| E. London,   | 26          |
| Christiania, | 20 t. 12 c. |
| Cape Town,   | 21          |

**White Lead—**

|                |           |
|----------------|-----------|
| Transvaal,     | £34 16s   |
| Pt. Lyttelton, | 2 t. 2 c. |

**TYNE.**

*Week ending February 29th.*

**Alkali—**

|            |           |
|------------|-----------|
| Rotterdam, | 9 t. 3 c. |
|------------|-----------|

**Ammonium Sulphate—**

|        |       |
|--------|-------|
| Genoa, | 30 t. |
|--------|-------|

**Antimony—**

|          |      |
|----------|------|
| Hamburg, | 2 t. |
| Antwerp, | 1    |

**Barium—**

|            |       |
|------------|-------|
| Barcelona, | 10 c. |
|------------|-------|

**Bleaching Powder—**

|             |            |
|-------------|------------|
| Horsens,    | 1 t. 11 c. |
| Rotterdam,  | 29 9       |
| Copenhagen, | 50 7       |
| Drontheim,  | 10 2       |

|              |       |
|--------------|-------|
| Lisbon,      | 16 11 |
| Harlingen,   | 10    |
| Antwerp,     | 63 12 |
| Christiania, | 4 10  |

**Caustic Soda—**

|             |             |
|-------------|-------------|
| Rotterdam,  | 11 t. 13 c. |
| Copenhagen, | 1 3         |
| Barcelona,  | 77 19       |
| Gothenburg, | 10 1        |
| Hamburg,    | 6 7         |
| Antwerp,    | 5 14        |

**Copperas—**

|             |           |
|-------------|-----------|
| Copenhagen, | 1 t. 2 c. |
| Bergen,     | 3         |

**Glue—**

|             |       |
|-------------|-------|
| Gothenburg, | 10 c. |
|-------------|-------|

**Litharge—**

|             |            |
|-------------|------------|
| Gothenburg, | 4 t. 12 c. |
|-------------|------------|

**Magnesia—**

|            |           |
|------------|-----------|
| Barcelona, | 3 t. 8 c. |
| Hamburg,   | 8         |

**Manure—**

|        |            |
|--------|------------|
| Genoa, | 85 t. 1 c. |
|--------|------------|

**Paint—**

|            |            |
|------------|------------|
| Genoa,     | 2 t. 16 c. |
| Hamburg,   | 3 15       |
| Antwerp,   | 4          |
| Rotterdam, | 8 dms.     |

**Painters' Colours—**

|        |         |
|--------|---------|
| Genoa, | 10 cks. |
|--------|---------|

**Paraffin Wax—**

|            |            |
|------------|------------|
| Barcelona, | 4 t. 19 c. |
|------------|------------|

**Soda—**

|              |            |
|--------------|------------|
| Nakskov,     | 4 t. 15 c. |
| Elsinore,    | 10 9       |
| Rotterdam,   | 37 11      |
| Christiania, | 16 9       |

**Soda Ash—**

|             |            |
|-------------|------------|
| Rotterdam,  | 3 t. 18 c. |
| Bergen,     | 6          |
| Gothenburg, | 12 19      |
| Hamburg,    | 2          |

**Sodium Sulphate—**

|          |            |
|----------|------------|
| Antwerp, | 50 t. 2 c. |
|----------|------------|

**Tallow—**

|          |           |
|----------|-----------|
| Hamburg, | 8 t. 1 c. |
|----------|-----------|

**White Lead—**

|             |            |
|-------------|------------|
| Copenhagen, | 2 t. 17 c. |
|-------------|------------|

**GOOLE.**

*Week ending February 26th.*

**Benzol—**

|            |                  |
|------------|------------------|
| Rotterdam, | 192 cks. 12 dms. |
|------------|------------------|

**Chemicals (otherwise undescribed)**

|            |         |
|------------|---------|
| Amsterdam, | 16 cks. |
|------------|---------|

**Coal Products (otherwise undes.)—**

|            |          |
|------------|----------|
| Antwerp,   | 472 bgs. |
| Boulogne,  | 4 cks.   |
| Hamburg,   | 25       |
| Rotterdam, | 93       |

**Colours—**

|          |             |
|----------|-------------|
| Hamburg, | 1 ck. 1 cs. |
|----------|-------------|

**Dyestuffs (otherwise undescribed)**

|          |        |
|----------|--------|
| Antwerp, | 2 cks. |
|----------|--------|

**Manure—**

|          |          |
|----------|----------|
| Bruges,  | 524 bgs. |
| Dunkirk, | 97       |
| Ghent,   | 100      |
| Ostend,  | 811      |

**Pitch—**

|          |        |
|----------|--------|
| Dunkirk, | 550 t. |
| Antwerp, | 467    |

**GRIMSBY.**

*Week ending February 29th.*

**Alkali—**

|           |                 |
|-----------|-----------------|
| Savannah, | 54 cks. 86 drs. |
|-----------|-----------------|

**Chemicals (otherwise undescribed)**

|            |         |
|------------|---------|
| Antwerp,   | 5 cks.  |
| Rotterdam, | 22 dms. |

**Coal Products (otherwise un des.)—**

|          |        |
|----------|--------|
| Antwerp, | 6 cks. |
| Dieppe,  | 160    |

**Colours—**

|             |                    |
|-------------|--------------------|
| Dieppe,     | 1 ck. 1 cs. 3 dms. |
| Hamburg,    | 2                  |
| Malmö,      | 2 tins 22          |
| St. Thomas, | 9 6                |
| Savannah,   | 10                 |

**Soap—**

|         |        |
|---------|--------|
| Dieppe, | 11 cs. |
|---------|--------|







# THE CHEMICAL TRADE JOURNAL AND OIL, PAINT and COLOUR REVIEW.

Publishing Offices: 32, BLACKFRIARS STREET, MANCHESTER.

461.

SATURDAY, MARCH 21, 1896.

Vol. XVIII.

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## ADVERTISEMENT.

### TENDER.

MIRFIELD GAS COMPANY.

Directors are open to receive TENDERS for the AMMONIACAL LIQUOR and Surplus TAR, either together or for Twelve Months from the 1st of April next. The Works per ton, and Ammoniacal Liquor f.o.b. at per oz. strength, Te t. endorsed "Tar" or "Ammoniacal Liquor," not later than Monday, March inst., addressed to  
SAMUEL DAY, Secretary,  
Company's Office, Ravensthorpe,  
March 12, 1896.

## Notices.

Communications for the *Chemical Trade Journal* should be sent to the Editor, and Cheques and Post Office Orders made payable to—

VIS BRCS., 32, Blackfriars Street, MANCHESTER.

Our Registered Telegraphic Address is—

"Expert, Manchester."

NATIONAL TELEPHONE 3060.

Terms of Subscription, commencing at any date, to the *Trade Journal*,—payable in advance,—including postage all over the world, are as follows:—

|                          |          |
|--------------------------|----------|
| Early (52 numbers)       | 12s. 6d. |
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| Quarterly (13 numbers)   | 3s. 6d.  |

## Advertisements.

Advertisements of Situations Vacant, Premises on Sale or To be Let, and Specific Articles for Sale by Private Contract are accepted in the *Chemical Trade Journal* at the following rates:—

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|                          |                       |
|--------------------------|-----------------------|
| 10 Words and under       | 1s. 6d. per insertion |
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Advertisements intended for insertion in the current week's issue should be sent to the office by Thursday morning at the latest.

## THERE ARE NONE SO BLIND AS THOSE WHO WILL NOT SEE.

AT last the Chief Officer of the Public Control Department of the London County Council has delivered himself of his conclusions concerning the precautionary measures that ought to be taken to prevent accidents with petroleum oil.

On most points we shall be content to leave this worthy officer and his unworthy recommendations to the tender mercies of the trade. Already the baiting has begun, and it promises good sport so far.

There are, however, one or two points in the Chief Officer's report which come within our province, namely, his remarks concerning the oil as distinct from the lamps. Before proceeding to discuss these points, however, it is unfortunately necessary to refer to the remarks which a contemporary has this week made in connection with this very report and the petroleum accident question in general. Were it not that the statements made are erroneous, we should let the matter pass, as mere expressions of opinion are not worth combating. After a fulsome eulogy on the Chief Officer and his report, we find the following startling pronouncement:—"Yet there is no law to prevent the manufacture in the dwellings of the people of explosives in the form of petroleum lamps which the smallest irregularity in handling or use will convert into agents for spreading death and destruction around them." A truly tasty sentence, which we have carefully refrained from punctuating, so as to preserve all its pristine beauty of expression. But it is not the sentence to which we take exception. Unlike our contemporary, we do not claim to be immaculate, and therefore do not wish to play the rôle of Dictator-general, for we know full well how a hiatus can now and then be passed by the most watchful editor. It is the statement we condemn. Why wonder at the absence of such a law? It would be far more wonderful if a law existed to prevent the manufacture of something that it is impossible to make. A petroleum lamp is to us quite a new kind of explosive. We did not know before that tin, brass and solder, or glass, with perhaps a little plaster of Paris, could either singly or in combination be worked up into a recipe for the manufacture of an explosive. We did know, however, that almost any combination of the above materials in the form of a lamp charged with petroleum (so-called) that flashes at 73°F. would do all our contemporary so graphically describes. In the next sentence we learn that "A short time ago some associated dealers . . . tried to convert this matter of lamp accidents to their own advantage by getting Parliament to raise the flashpoint for lighting oil all round." However such inane twaddle can have crept into the otherwise usually estimable pages of our contemporary we cannot imagine. If at all competent to speak on the matter of lamp accidents the writer must have been aware that for 34



years, ever since the proposed Bill of 1862, the *crux* has been to fix a fairly safe flashpoint. Moreover, the very introduction of the present Abel (or close) test, originated from the Government inquiry about 1870, at which it was decided that the old 100°F. flashpoint (open test) was too low to be safe. There was no mention of lamps. Where does the "short time ago . . . tried to convert this matter of lamp accidents" come in now?

The lamp theory was never heard or thought of until a few years ago. At that time, the low flash party saw that the flashpoint question was becoming unpleasantly prominent, because the public began to realize that the present 73°F. Abel test, was but the exact equivalent of the old 100°F. open test, which years ago had been condemned as too low. Consequently, with truly masterly astuteness, the Standard Oil Company, and their Petroleum Association, suddenly began to find out that it was not a question of dangerous lamp-oils, but dangerous oil-lamps.

Our object in dwelling thus lengthily upon the misrepresentation to which the real aspect of the situation has been subjected is merely to assist in the correct solution of a question of great public interest, and we anticipate with equanimity the wrath which our temerity will probably draw down upon our heads. We are content to deal with facts, and facts only, and to leave sentiment and individual interests to other and more practised advocates.

We can now deal with the officer's report itself. In the first place, the proposals on lamp legislation have already been ably criticised by a leading member of the Midland lamp trade, who states that "serious comment on the proposals is all but impossible . . . for more impracticable schemes could scarcely be propounded." We must confess we cannot see the justice of inflicting such positive and wholesale restrictions upon the lamp-making industry, when the chief objection raised by the Government against the 100° flashpoint is that they *believe* the raising of the standard would hamper the American oil industry.

The report distinctly states that "*raising the flashpoint would effectually prevent accidents if it were practicable.*" Presumably, the supposition of impracticability is based upon the fact that raising the flashpoint "would not prevent the sale and use for illuminating purposes of oil below that flash point," i.e., the point fixed upon, and presumably 100°F. You cannot sell what you have not got, and if no burning oil below 100°F. (Abel) comes into this country, burning oil under 100°F. (Abel) cannot be sold. Naphtha could be, and is sold, but it has to be sold as such. To vend naphtha as burning oil is practising a dangerous fraud. We take it that at present no petroleum inspector would sanction the distribution of oil flashing below the Government standard of 73°F. as petroleum burning oil, and that all oil below that point is subject to the regulations of the Petroleum Act of 1871. We now merely propose to treat all oil under 100°F. (Abel test) in precisely the same way as all oil under 73°F. (Abel) has been treated for years. Wherein lies the impracticability? It seems to us to lie wholly and solely in the fact that the Standard Oil Company do not *want* the change and so "dub" it impracticable. But we are not engaged just now in considering the whims and wishes of millionaires, but the daily safety of millions of British subjects of the middle and poorer classes. The report positively supports the principle of raising the flashpoint and pronounces it to be an effectual preventive of accidents, but doubts its practicability. We should like to know how far the Chief Officer has sought the aid of those who could enlighten him on this point. Not

very far it is certain, for he is still steeped in blissance. But the principle has been admitted to and that is enough. The rest will follow, thing is prepared for the earnest follow this admission. There is just one other lit For a long while the L.C.C. officers have been inquests and bearing witness that no dangerous came into London. In the face of this how is it po this report (which emanates from the same depart admit, even in principle only, that raising the flashp effectually prevent accidents? With these facts s leading members of the lamp-trade in the face, i surprise to us if they submissively allow the L.C.C. such a burdensome yoke upon their necks. If th British manufacturer of to-day is made of very diff to his forbears.

## The Patent List.

*This list is compiled from Official sources in the Technical Laboratory, under the immediate supervision of George E. Davis and Alfred R. Davis, who report upon the value of Chemical Patents.*

### APPLICATIONS FOR ENGLISH LETTERS PATENT

- Improved Colour Grinders. J. Smith and A. Hulse. 4,653. March 1.  
 Manufacture of Alkali Cellulose. C. F. Cross. 4,713. March 1.  
 Filtering, Washing, and Drying Apparatus for Manufacture of Bicarbonate. W. L. Wise. 4,725. March 2.  
 Nitrites of Potash and Soda. L. G. Paul. 4,743. March 3.  
 Cement Manufacture. J. E. Howard. 4,918. March 4.  
 Manufacture of Superphosphates. A. A. and C. J. Yvert. 4,941. March 5.  
 Producing Carburetted Water Gas. W. Wheatley and G. L. March 5.  
 Improvements in Sulphate of Ammonia Saturators. P. Duggan. March 5.  
 Joints for Pipes in Sulphuric Acid Plant. P. Duggan. 5,012. March 5.  
 Enriching Coal Gas. R. G. Shadbolt and J. Wilson, of the firm of and Sons, Ltd. 5,051. March 6.  
 Treatment of Sulphide Ores. T. Parker and J. Pullman. 5,087. March 6.  
 Electrolytic Process and Apparatus therefor. G. B. Baldo. 5,088. March 6.  
 Obtaining Oxygen from Air. L. Chapman. 5,133. March 7.  
 Preparation of Material for Use in Manufacture of Oxygen. L. Chapman. 5,134. March 7.  
 Treating Waste Salt and Apparatus therefor. J. C. W. Stanhewell. 5,165. March 7.  
 Cyanides from Waste Products in Gas, Chemical, and Iron Works. G. P. Lewis and F. S. Cripps. 5,184. March 7.  
 Apparatus for Manufacture of Ozone. M. Otto. 5,195. March 7.

### ABSTRACTS OF LATEST COMPLETE SPECIFICATIONS

*These abstracts are specially prepared for the Chemical Trade, and ALL RIGHTS of publication are RESERVED. This is a series of abstracts of Chemical and allied patents accessible to the public.*

- Improvements in Solidifying Carbon Dioxide and Utilizing the Solidified Substance. H. S. Elworthy, 19, Hill-road, Bandra, Bombay, and P. D. Henderson, 89, Philbeach Gardens, S.W. Eng. Pat. 7,143. 1895.

This patent is essentially a mechanical one, and for particular specification should be consulted. The object is to make of solid carbonic acid or slabs of carbonic acid ice, divided easily broken, each piece being marked with the volume of yield and the size of bottle it will aerate. The gas compressed liquid CO<sub>2</sub> to a coil of pipe immersed in a tank containing ice having non-conducting walls. The alcohol is cooled to a low temperature. Part of the expanded gas is passed to storage vessels and part is used to drive a second gas compressor.

- An Improved Process and Apparatus for the Separation of Acid Gas from the Products of Combustion, or other Mixed Soluble Gases. H. S. Elworthy, 19, Hill-road, Bandra, Bombay, and P. D. Henderson, 89, Philbeach Gardens, S.W. Eng. Pat. 7,281. April 1895.  
 The products of combustion are first passed through an furnace, whereby the monoxide is converted into dioxide, and then passed through a scrubber to remove sulphur dioxide, as by a gas compressor into an absorber. The latter is on muc







## IMPORTS AND EXPORTS FOR FEBRUARY.

THE Board of Trade returns for last month show a satisfactory expansion of trade. In the imports, indigo, cutch, manures, and oilseed cakes show up well. In the exports, with the exception of alkali, most other chemical products show an increase.

## IMPORTS OF FOREIGN AND COLONIAL PRODUCE.

| ARTICLES.                         | Quantities. |            |
|-----------------------------------|-------------|------------|
|                                   | 1895.       | 1896.      |
| Margarine ..... Cwt.              | 81,819      | 80,537     |
| Copper Ore and Regulus..... Tons. | 10,322      | 13,357     |
| Pyrites..... "                    | 44,899      | 48,219     |
| Tin ..... Cwt.                    | 58,486      | 59,181     |
| Alkali ..... "                    | 2,393       | 5,869      |
| Brimstone ..... "                 | 66,550      | 82,740     |
| Dyes, Coal Tar ..... £.           | 44,442      | 63,517     |
| Saltpetre ..... Cwt.              | 11,763      | 29,310     |
| Petroleum ..... Gall.             | 8,442,378   | 18,094,640 |
| Turpentine ..... Cwt.             | 11,176      | 10,693     |
| Guano ..... Tons.                 | 554         | 2,204      |
| Nitrate of Soda ..... "           | 5,410       | 19,447     |
| Paraffin ..... "                  | 64,040      | 35,957     |
| Rosin ..... Cwt.                  | 110,905     | 122,604    |
| Tallow and Stearine..... "        | 31,905      | 174,150    |
| Oil Seed Cake ..... Tons.         | 19,423      | 22,180     |
| Wood Pulp..... "                  | 14,608      | 25,326     |

## EXPORTS OF BRITISH AND IRISH MANUFACTURES.

| ARTICLES.                    | Quantities. |           |
|------------------------------|-------------|-----------|
|                              | 1895.       | 1896.     |
| Alkali ..... Cwt.            | 394,760     | 340,031   |
| Cement ..... Tons.           | 14,347      | 27,612    |
| Coal and Coke ..... "        | 1,891,586   | 2,308,521 |
| Copper, all kinds ..... Cwt. | 65,041      | 120,117   |
| Iron and Steel ..... Tons.   | 157,830     | 237,346   |
| Chemical Manures ..... "     | 25,034      | 36,516    |
| Oils, seed ..... "           | 3,171       | 4,442     |
| Salt ..... "                 | 33,057      | 41,124    |

## Official Memoranda.

(From the Board of Trade Journal.)

## THE CAMPHOR TRADE.

In times gone by camphor was produced in Sumatra and Borneo and in other parts of the East Indies, as well as in China; now, however, the crude camphor of commerce is a product of Japan proper and the island of Formosa exclusively.

Great difficulties remain to be surmounted before the Formosa trade can be depended on, for the trees are only found inland, where the inhabitants are aboriginal barbarians, who make matters most unpleasant for explorers.

The Formosa drug is inferior to the Japanese; the latter, by reason of its greater purity, pinkish colour, and bold grain commanding in foreign countries higher prices, by some 2 per cent. or 3 per cent., in spite of its comparative abundance.

The districts in Japan famed for camphor trees are Kiushu, Shikoku, Iga, Suruga, Isé, and Kishiu. The forests owned by the people are almost denuded of timber, and soon very little will be left. However, the Government forests are still very rich in camphor trees, and it has been estimated that this alone will maintain annually, during the next 25 years, the full average supply of crude camphor.

Formerly very little care was bestowed upon the preservation and cultivation of this valuable timber. More recently, however, not only the Government, but also the people have been giving to this most important question the attention it long ago deserved.

The roots contain a much larger proportion of camphor than the trees, 10 lbs. of crude camphor out of 200 lbs. of wood chips being thought satisfactory. The Suruga timber yields a much smaller percentage.

It appears that the only process of extracting camphor from the wood among the mountains in Japan, and the materials used, are of the roughest and most unscientific description. The wood-chips are boiled, the vapour being conducted into a receptacle containing several partitions surrounded by cold water. In the sides of these partitions are apertures, which cause the vapour to fill the divisions by a circuitous route, thus improving the grain of the camphor.

The crude article is brought to market, as a rule, in very rudely constructed wooden tubs.

To make it fit for shipment requires much work, diligence, and perience. Each tub is carefully sampled, vertically and diagonal and the samples are tested by fire and sometimes by alcohol. If solid adulterant is discovered, the condition of the drug is next quired into, the difficulty of this step being best explained by at stating that this crude camphor contains a quantity of water, or oil a water, varying anywhere between 5 per cent. and 20 per cent.

This trouble overcome, the rest is comparatively easy, and consists in weighing, cutting, mixing, and packing for shipment, the packing being in tubs prepared on the premises, partly out of the original packages.

Of course the camphor cannot be packed in its crude condition much of it has to be drained and dried, and frequently a special part of "dry" must be bought, at a very high figure, for mixing with it.

Exports of camphor from Japan appear to have increased in value in proportion to the quantity, during the last ten years, as the following table will show. In this case the value of the yen has been converted at the average rate for the years given, which varies in each case.

## Exports of Camphor from Japan.

| Years. | Quantity. |         | Value. |
|--------|-----------|---------|--------|
|        | Lbs.      | £       |        |
| 1886   | 7,267,000 | 151,000 |        |
| 1887   | 8,637,000 | 179,000 |        |
| 1888   | 6,074,000 | 153,000 |        |
| 1889   | 6,629,000 | 213,000 |        |
| 1890   | 5,952,000 | 314,000 |        |
| 1891   | 5,905,000 | 272,000 |        |
| 1892   | 1,419,000 | 186,000 |        |
| 1893   | 3,317,000 | 167,000 |        |
| 1894   | 2,762,000 | 109,000 |        |

An intelligent and well-directed exploitation of the island of Formosa, where the camphor tree is so abundant, would probably have the effect of lowering prices, by increasing the amount of camphor placed on the market.

The principal countries dealing in camphor are Hong Kong and the United States. The exports from Japan in 1894 were as follow:—

| Countries.           | Quantity. |        | Value. |
|----------------------|-----------|--------|--------|
|                      | Lbs.      | £      |        |
| Australia .....      | 10,600    | 918    |        |
| India.....           | 78,300    | 6,096  |        |
| China.....           | 6,600     | 268    |        |
| France.....          | 4,100     | 302    |        |
| Germany.....         | 13,100    | 7,459  |        |
| United Kingdom.....  | 108,600   | 5,928  |        |
| Hong Kong.....       | 1,654,900 | 87,524 |        |
| United States.....   | 772,500   | 37,464 |        |
| Other countries..... | 2,900     | 162    |        |

Hong Kong is only a transit port where the camphor is refined previous to exportation to Europe.

A special feature of the year 1894 was a material reduction in business in camphor from Japan (as distinguished from camphor from Formosa, now also a part of Japan) in comparison with former years, attributable perhaps to the ever increasing production of Formosa, and the gradual improvement of the quality of the island product.

During the year there was a fraudulent attempt at mixing inferior Formosa camphor with Japanese produce, and passing it off as Japanese camphor. Through the energetic and effective measures which were at once taken by leading camphor exporters, supported by the Japanese Chamber of Commerce, the attempt was discovered at once and such mixtures left the ports.

Another feature of remark was the formation of a guild amongst native sellers, with the declared object of establishing a much-needed reform in quality by introducing certain new and uniform delivery terms, and these have no doubt done away with a great deal of trouble and disputes previously existing.

Mr. N. Perkins, Assistant in Her Majesty's Consular Service, in report on the island of Formosa, dated January 31st, 1895, states that in the north of the island the trade in camphor is rapidly growing in importance; it is, however, attended by considerable risks, as he advances have to be made, and sometimes, whether due to the raid of savages, or other causes, without any return, either in cash or camphor.

New districts are from time to time opened up; the chief at present being Hoonim or Yünlin, Kagee or Chia-I, Chip Chip, Polihsis, Ao-doä-po.

## MINERALS IN SOUTHERN RUSSIA.

The *Revue Commerciale* of Berdiausk, states that vast deposits of iron, graphite, kaolin, and other minerals have been found at the village of Grand Tounak and in German colonies; anthracite has



discovered near Orekhov at the village of Bělitskoŭé. Specimens of kaolin have been already analysed at St. Petersburg, Berlin, and Marseilles; and it has been found that the quality is excellent for the manufacture of porcelain. As for the iron ore, it was said to contain from 62 to 72 per cent. of pure iron, and very little sulphur or phosphorus, in which it resembles the celebrated ore of Krivoi-Rog.

#### PEAT-COAL IN NORWAY.

A specimen of a new fuel, peat-coal, together with report of the inventor, Mr. William Schöning, who claims to have discovered a practical means of converting peat into a cheap and valuable fuel, has been sent to the Foreign Office.

Mr. W. Schöning states that after long continued experiments, he attempted the simplest and most evident manner of pressing the peat, at the same time carbonising it in the press.

In order to test the heating capacity of the new fuel it was analysed by Mr. Schmelck, analyst to the city of Christiania, with the following results:—

|             | Per Cent. |
|-------------|-----------|
| Carbon ..   | 66.15     |
| Hydrogen..  | 6.60      |
| Oxygen ..   | 17.75     |
| Nitrogen .. | 1.86      |
| Sulphur ..  | 0.38      |
| Ashes ..    | 3.76      |
| Moisture .. | 3.50      |

100.00

According to Mr. Schmelck's further analysis it has a firing value of 6,556 degrees of heat per kilog.

The Consul-General at Christiania, commenting upon Mr. W. Schöning's invention, says that if, when thoroughly inquired into and tested, the worth of the various inventions be anything like that which is claimed for them, it seems a pity, in these times of depressed agriculture and vexed land questions, that Great Britain, and especially Ireland, should not participate in the advantages accruing from the utilisation of their peat moors.

#### "SILICATE OF ALUMINIUM."

Mr A. G. Vansittart, her Majesty's Consul at Chicago, reports that a new product has been discovered in the vicinity of Kansas City, Missouri, which is called "silicate of aluminium;" it is a soft stone, and can be cut with a penknife. When placed in cold water for a period of about four hours it expands to about three times its size and becomes a natural paste; this paste is put on horses' feet that have become sore from over-travelling on hard roads, and it seems to have proved a speedy and effective cure in many cities in the United States.

It is said that some foreign countries are now trying it, and that one China house contemplates manufacturing different kinds of goods out of the substance. It has hitherto been used for bunions, sprains, and also for tooth powder, with good results.

The German Government have experimented recently with this "silicate of aluminium" on some of their artillery and cavalry horses that had sore feet, and were so pleased with the result that they have since ordered 20 tons of it to be shipped to Hamburg.

In the event of the above information interesting British houses, inquiries might be addressed to Mr. Philip E. Burrough, British Vice-Consul at Kansas, who will be glad to supply full information on the subject and send samples if necessary.

#### GROWTH OF THE ALUMINIUM INDUSTRY.

THE efficiency of the electro-metallurgical methods now exclusively employed in the production of aluminium is strikingly shown by the figures of the following tabulation, representing the product of the United States since 1882. The first impetus to the industry was given in 1886, when the electric furnace plant of the Cowles Brothers was fairly put in operation. In 1889, when the Pittsburgh Reduction Company entered the field with the Hall electrolytic process, another great advance in output was recorded; and the industry has since been steadily growing year after year.

| Year.      | Pounds. | Year.      | Pounds. |
|------------|---------|------------|---------|
| 1883 ..... | 83      | 1889 ..... | 47,468  |
| 1884 ..... | 150     | 1890 ..... | 61,281  |
| 1885 ..... | 263     | 1891 ..... | 150,050 |
| 1886 ..... | 3,000   | 1892 ..... | 259,885 |
| 1887 ..... | 18,000  | 1893 ..... | 339,629 |
| 1888 ..... | 19,000  | 1894 ..... | 550,000 |

The *Iron Age* estimates the American output of aluminium in 1895 at 850,000 pounds, and believes that the production of the present year will reach the imposing total of 6,000 pounds per day, or over 2,000,000 pounds.

## Our Book Shelf.

**PRACTICAL STUDIES IN FERMENTATION.** By E. C. Hansen, translated by A. K. Miller, and revised by the author. 277 pp., including index. 19 woodcuts. London: E. and F. N. Spon. 1896.

This work provides a full, clear, and practical review of the author's investigations on the cultivation of yeasts. The first two chapters are mainly devoted to a history of the author's work and its relation to the methods of other investigators. The remaining six chapters deal with the practical application of zymotechnic methods to brewing. Chapter five in particular is very interesting, and deals with the question, "What is the pure yeast of Pasteur?" Perhaps the most useful chapter to actual brewers is the sixth, which describes a number of most useful and instructive investigations on the diseases of beer produced by alcoholic ferments. The same class of reader will also be equally interested in the description of the different plant employed in cultivating pure yeast.

The work, which is neatly got up and well printed, is certainly one of the most helpful and suggestive contributions to the study of fermentation in the English language.

**HELPS TO HEALTH AND BEAUTY,** being 200 practical prescriptions by a Pharmaceutical Chemist. 117 pp. London: James Clarke and Co. 1s.

The recipes are conveniently arranged, reference being facilitated by the alphabetically arranged table of contents. The prescriptions are arranged under various headings, such as the hair, hands, face, &c. It is not to be supposed that every good prescription is included in this collection. It may be said, however, that with hardly an exception, there is not a section that does not contain two or three reliable preparations in addition to what may be called stock formulae.

**THE CHEMISTRY OF POTTERY.** By K. Langenbeck. 197 pp. Illustrated. London and Easton, Pa.: Chemical Publishing Co. 1895.

The author has confined himself to relating only what he has arrived at from personal experience. He therefore admits the book must have many shortcomings. From one point of view this may be so, but it ensures the thorough practicability of all that the book contains, a feature of far greater importance than most authors appear to realize. The majority of technical works of this nature consist of a careful and albeit useful compilation of the work of English and foreign investigators, with a small amount of additional information, which is the outcome of the author's direct experience. The value of such books lies mainly in the latter portion. The other is attainable by those who need it, and is not always worth the trouble of collection. Mr. K. Langenbeck has set a good example in confining his remarks to what he is actually acquainted with, and his book is proportionately valuable. He lays, with justice, great stress upon the comparative worthlessness of the majority of clay analyses to the potter, owing to the lack of the necessary additional data concerning physical tests and practical trials. The book from start to finish is as instructive as it is readable. All is good, but the chapters on physical and empirical tests, glazes, stoneware, and burning the ware are among the best.

**MACHINERY AND APPARATUS FOR MANUFACTURING CHEMISTS.** By J. C. Shears. 93 pp. Illustrated. London: E. Marlborough and Co. 1895. 3s. 6d.

This little work belongs to the quasi-catalogue class, which appears to be growing in favour. In other words, it is a readable catalogue of chemical apparatus for manufacturing purposes, the text being enriched by thermometric tables, and handy data concerning the measurement of liquids and the cubic capacity of vessels of varying shapes and dimensions. Attention is paid chiefly to stills, extracting and evaporating pans, macerators, disintegrators, presses, and general, food, fine chemical, and soap manufacturing apparatus, concerning which particulars of the usual sizes and principal advantages, etc., are given. The chapter on steam boilers is likely to be of use to many who have to do with boilers and are nevertheless not qualified to rank as engineers. The book will prove a very handy source of reference to all chemical manufacturers outside the heavy chemical trade, which it does not profess to deal with.

**CATALOGUES AND DIRECTORIES.**—We have received a copy of the *Directory of Papermakers of the United Kingdom (1895)* from Messrs. Marchant, Singer, and Co., 47, St. Mary Axe, E.C. It is conveniently got up, and gives a list of English, Scotch, Irish, Welsh, and Manx papermakers, with particulars of machines and makes. The other



features comprise a list of London representatives of the trade, London wholesale stationers, and a list of mills, arranged alphabetically, numerically, and in counties. Two useful additions are to be found in the classification of makes and trade designations used as water marks. *Messrs. Frederick Jackson and Co., 14, Cross-street, Manchester*, send us a new catalogue and price list of chemical and physical apparatus, and general scientific instruments. It is freely illustrated and indexed, and being strongly bound, is a great advance on the usual forms of *gratis* catalogues. *The Stanton Ironworks Co., Ltd.*, near Nottingham, have recently issued an illustrated descriptive account of Derby and district, with an account of their ironworks, blast furnaces, and collieries at the end. One of the most interesting features is the company's pipe foundry, in which pipes up to 60 inches in diameter are made.

### INDUSTRIAL WATER SUPPLIES.

THERE are a number of trades in which a regular and ample supply of pure water is essential, particularly papermaking and bleaching. The economy of utilizing natural supplies has been shown by facts and figures so often that there is no need to lay further stress on this point, but it will be interesting to many readers to know something of the apparatus by which the water can be pumped at a cost of about 1d. per 1,000 gallons. In Fig. 1 we illustrate one of Mr. T.

Matthews's pumps, which is delivering from 15,000 to 20,000 gallons per hour into a tank on the roof of a paper-mill, and from this tank supplying water to the works by the original system of pipes. The water is obtained from an artesian boring, and as the pump bucket is placed 120ft. below the surface, down into the very source of the spring, the water will have to be pumped down a considerable distance before the supply can fail. As a matter of fact, the whole of the wells in the district would have to run short of water before the one mentioned would reduce its supplies, and no pump for a considerable distance off, which was not at the same depth, could procure water. Full advantage has been taken of this important principle of well-sinking by Mr. Matthews in designing his patent system. The water coming from these depths varies greatly with the nature of the strata from which it flows, a point which manufacturers have to consider in fixing upon the locality in which they intend to settle, especially if the quality of the water is of importance.

The adoption of the above-named principle by Mr. Matthews has enabled him to get almost the theoretical supply of water, and as an instance of this, we may mention that at the works of a large calico printer, in which the best result obtained with other pumps had been 9,000 to 11,000 gallons per hour, the system put in by Mr. Matthews immediately increased the supply to 35,000 gallons per hour. Another special feature in Mr. Matthews' system is that the bucket, clacks, rods, guards, &c., can be lifted direct to the surface without the necessity of any workman going down the well, and in the case above referred to

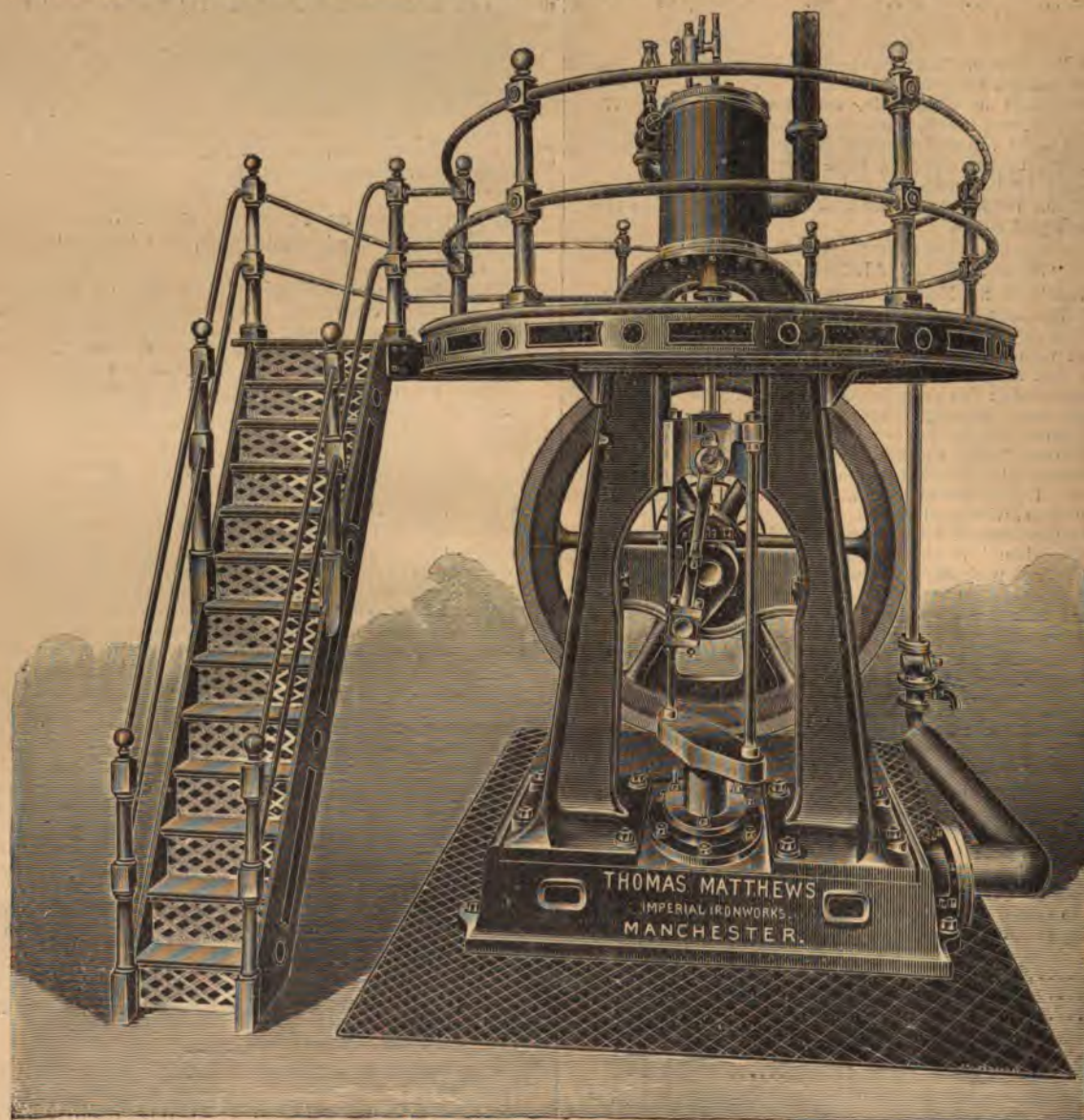


FIG. 1.



net, &c., can, with all its appendages, be drawn to the surface in a space of two hours, and replaced in the same time, which is a great improvement on the old shaft or well. This system in many cases saves the necessity of costly wells, as the bore is made at the surface and the pump attached direct to the tube. The smaller outputs the pump shown in Fig. 2 will be found of use. It is a pump recently designed for deep bore hole pumping, now working at the Star Paper Mills, Feniscowles, near Black-

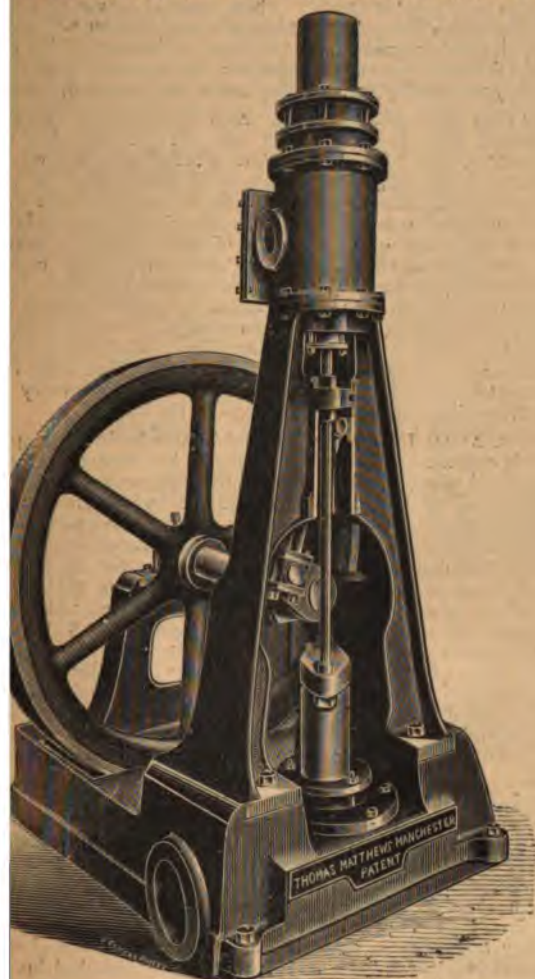


FIG. 2.

The illustration being engraved from a photograph of the engine now at the above works. This pump has a bucket about 13 inches in diameter, placed down the bore to the source of supply, and is capable of raising about 30,000 gallons per hour, 24 hours per day. The consumption of steam is small, and the repairs are now, after two years, stated to have been *nil*. The water raised is of the best quality, and costs about five-eighths of a penny per 1,000 gallons.

### ROUGH ON AMERICAN PETROLEUM.

Galician oil has now begun to compete with the American product in Germany. For the first time the export of refined oil from Austria-Hungary to Germany has been made possible by the decline in the price of the Galician crude oil, caused by the increased production in that country. The price of Galician oil was formerly 4 florin (8s. 4d.), but since the opening up of the wells at Schodnica it has fallen below 2 florin. This made it possible to produce refined petroleum at a figure, which allowed it to compete in Germany. In fact, several refineries, especially that at Pilsen, Bohemia, have commenced to compete with the American oil in the German market, and large quantities of refined oil have been exported already to Germany, mostly to Bavaria and Prussia. The Austrian railroads are assisting the refiners in their trade by reducing freight rates. Since November 1st, a reduced freight tariff for refined petroleum and crude benzine

has been in force for the export to Bavaria. The export of crude oil to Germany is impossible at present, because the German import duty is the same on crude as on refined petroleum, namely 6 marks (about 6s.). But as in Germany the desire becomes steadily stronger to supply the home demand by home production, that is refining, and to renounce the American oil, it may be possible that the import duty on crude will be reduced so as to allow the export of Austrian (Galician) crude oil to Germany.

## Correspondence.

*\* We do not hold ourselves responsible for the opinions expressed by our correspondents.*

### DEVELOPMENTS IN THE USE OF COAL-GAS.

*To the Editor of the Chemical Trade Journal.*

SIR,—A great change has quite recently come over the coal-gas industry, and this has been so strongly marked during the last 12 months that it appears likely in the near future to become a matter requiring serious attention. It will be well known to many gas engineers that I have for at least 20 years past persistently advocated the use of gas as a fuel for commercial and industrial purposes, and although the effect has been, until recently, very small as compared with the possibilities, the practical result in the aggregate is by no means small. The steady slow growth of this department has recently undergone a most startling change, and industries carried on by manufacturers in the good old style run a serious risk of being left behind in the race by those who have adopted coal-gas for important work, on a scale previously undreamt of. New developments in the form of special burners and furnaces, on a comparatively large scale, have given a sudden and unexpected rise to a steady demand for appliances for innumerable purposes, entailing a gas consumption which a few years ago would have been looked on as incredible. Burners and furnaces of all kinds requiring a gas consumption of from 200 to 1,000 cubic feet per hour for continuous work are now matters of daily demand, and this demand is steadily and rapidly growing. Even now, although the work is new, and to a very large extent special, and therefore costly, the doubt and hesitation of the old times are gone, and manufacturers begin to see that coal-gas for exact work is a necessity at any reasonable price. The daylight and summer service is in many districts growing rapidly, outside the acknowledged one for domestic cooking, and the use of gas on a large scale for manufacturing purposes is growing faster even than my own imagination could have conceived. The manufacture of apparatus of this class is by no means simple at present—in its comparative infancy, and as a matter of profit to the designer and maker it is small as compared with the wholesale production of thousands of burners, &c., of uniform pattern, but it is sufficient to require a special staff, and its growth bids fair to make it a very important industry in a short time. The best point is that once begun, none turn back; on the contrary, fresh developments occur, and the business is now of sufficient importance to make it worth special study and attention. The long expected has come to pass, and rows of furnaces, heated by coal-gas, may now be seen where, until recently, foundry-coke was used; and, what is much more to the point, these furnaces, after experience and after paying the gas bills, are being added to, and larger ones are being built. Bearing on this subject, a paragraph now going the rounds of the Press, referring to some remarks by Herr E. Schweitzer on "the use of gas for singeing fabrics," is worthy of note. The facts as stated by him may now be true on the Continent, and might have been so in England 15 or 20 years ago, but his information is sadly behind the times, so far as this country is concerned. The slit burner described is a relic of the past. I have not seen one in use for at least 10 or 12 years, and those of your readers who are engineers will appreciate the impossibility of retaining the absolute truth of a tube with a slit  $\frac{1}{16}$ -in. wide and of any length from 3 to 15 feet, the burner being subjected whilst in use to excessive changes in temperature. As a matter of fact, these slit burners never remain true, and the work done by them is defective. There is no difficulty in producing burners giving an *absolutely* uniform flame, without break, and of any length. The curious difficulty made by Herr Schweitzer as to starting the web and flame simultaneously has no existence in modern machines; the web travels over a roller carried by two quadrant arms, which are vertical, whilst the burner is being adjusted; the turning down of these arms starts the machine, and places the cloth in the exact position required; no doubt there are antiquated machines in which trouble occurs. The absolute precision and practically unlimited power which can be obtained by the use of coal-gas as a fuel and the ease with which automatic control arrangements can be made, place it in the first rank as a fuel, where precision of results and economy of skilled labour are important, and those employed in industries where these conditions are important are becoming rapidly aware of these facts.—Yours, &c.,

THOMAS FLETCHER, F.C.S.

Warrington, March 11th, 1896.



## DIVULGING TRADE SECRETS.

### IMPORTANT DECISION.

IN the Mayor's Court last week, Messrs. Wake and Sanders, mica merchants, Great St. Helen's, E.C., sued two of their former clerks, Horace and Edward Calhaem, for damages for breach of duty in improperly disclosing the names and addresses of the plaintiffs' customers. They also claimed that any notes or memoranda now in the possession of the defendants and belonging to the plaintiffs should be given up to them, and asked for an injunction restraining the defendants from using the information obtained. It was stated that the defendants had, while in the plaintiffs' service, acquired a knowledge of the mica business, which was carried on by only six firms in London, and had disclosed to another firm the names and addresses of the plaintiffs' customers, and the prices at which the plaintiffs were accepting contracts. With this information the rival firm—which, it was suggested, consisted of the defendants themselves—had, it was said, undercut the plaintiffs in their business, and by sending out slightly lower tenders had obtained contracts which would otherwise have gone to the plaintiffs. A member of the plaintiff firm said that, when taxed with the breach of duty, one of the defendants had practically admitted his guilt. By consent of the parties a verdict was returned for the plaintiffs against each defendant for £10., and an injunction was granted. The plaintiffs estimated their loss over the matter at £250., but they agreed to forego their costs as the defendants were young men just starting in life. The Judge said he thought the plaintiffs had been not only just but generous, and the defendants might have found themselves in a much more serious position, as there was such a crime as conspiracy.

## Trade Notes.

**GOLD PRODUCTION IN THE RAND.**—That the Rand gold mining industry is recovering from the effects of the political troubles is evident from the fact that the February output was 18,840 oz. greater than that of January; but the total of 167,018 oz. is still very poor, and falls short by 2,277 oz. of the production in February, 1895, which was itself disappointingly small. Nothing very great was expected under the existing conditions of short labour supply and a good deal of unrest; but it is at least satisfactory that the rate of production is once again on the increase.

**THE "CUMMER" DRYER.**—We learn from Messrs Chas. Enth and Co., of 70, Gracechurch-street, E.C., that they have received a further order for Crummer dryers amounting to £1,190. from a Belgian firm, the previous order for £1,640. from the same firm having been received last January. The complete plant has been adapted for drying cement slurry within a few hours of its manufacture and in all weathers and seasons. They are also shipping drying apparatus to France, Germany, Spain, and Russia.

**SWANSEA METALLURGICAL INDUSTRY.**—The Mannesmann Tube Works at Landore are extremely busy with orders for tubular telegraph posts for South Africa and India, boiler tubes for the Royal Navy, and bicycle spokes for the States. One American buyer, who was across here a few weeks ago, left an order for about £25,000 worth of the latter. It is not very likely, however, that the American demand will last for long, as works are being erected in the States to carry on the same process of manufacture as at the Landore works. Another new industry which promises to assume large dimensions at Swansea is a new process of dealing with complex ore exported by a London firm. A quantity of stuff is being consigned from Australia for treatment, and 2,000 tons or so have already arrived.

**CHEAP GAS INDEED!**—Amidst the desert of municipal poverty in America there are one or two small cases which deserve attention. One is the city of Lancaster, in Ohio, which owns its natural gas. Nothing could be more reasonable than that the State or the cities should be owners of the natural gas which serves as fuel, lighting, and driving power. Lancaster originally bought the concern from a company, and the management was placed in the hands of three trustees elected by the people for three years. The municipality has now been supplying the citizens with natural gas for seven years at a cost to the consumer less than half that which is charged in other gas towns. The city now owns ten good wells, with a total capacity of 25,000,000 cubic feet of gas per day, of which not more than one eighth is needed, the balance being shut in. The city permits its customers to burn gas without meter at the following charges:—Cooking stoves, one dollar per month; heating stoves, one dollar per month from October to May, and without cost during the summer months. The gas burns day and night in the houses, offices, and stores, keeping the house at an even temperature without the care, labour, or dirt which accompanies the use of coal, and at about half the cost. No fuel but natural gas is used in the city.—*London.*

**ANTHION.**—Under this name a new and powerful oxidiser has been placed upon the market by the *Chemische Fabrik*, &c. It is potassium persulphate, formed by the electrolysis of an solution of the sulphate. The persulphate is precipitated at an anode, and may be separated and purified by re-crystallisation in warm water. It is said to be employed advantageously in dyeing and bleaching, but its greatest utility is found in photography where it is applied successfully for the removal of the last hypo from photographic prints. These residual traces of hypo used in fixing the photographic image, which resist removal by prolonged washing—and which are held to be responsible for the gradual deterioration of photographic prints—are said to be completely removed by the oxidising action of the persulphate.

**RELATION BETWEEN OPACITY AND MOLECULAR WEIGHT.**—Experiments have been made by Mr. H. B. Knowles, Bradford Technical College, and Mr. W. Ackroyd, analysis Corporation of Halifax, which promise to be of high scientific value. They have succeeded in demonstrating, in the case of fifteen prepared chemical compounds, that the opacity of these is in relation to the weight of the molecules of which they are composed. In the investigation, molecules of the same shape were compared—as, for example, oxides of aluminium, chromium, in which there was proved to be a gradual increase of opacity with increased molecular weight. This has been found to be the case with the sulphates of iron, nickel, and cobalt with the oxides of magnesium, zinc, and mercury. The same extends to the metallic elements, in which the transparency to Röntgen rays increases with the lightness of the molecule.

**LUTEOL AS AN INDICATOR.**—Luteol is insoluble in water, soluble in cold alcohol, but readily soluble in hot alcohol and concentrated sulphuric acid dissolves luteol with a red colour, re-precipitated by water. In concentrated hydrochloric acid it is sparingly soluble, but perfectly insoluble in the same acid. Alkalies dissolve it readily with a yellow colour. Luteol expels carbonic acid from the carbonates, and the acid character of the solution is much increased by the introduction of an atom of chlorine. Sensibility of the change of colour is very great. If we add a dilute soda-lye to 1 litre of water, and take 5 to 10 drops of the liquid, it is turned very distinctly yellow. Addition of a few drops of an alcoholic solution of phenolphthalein. Hence its sensitiveness is very decidedly greater than that of phenolphthalein and litmus. As compared with phenolphthalein its advantage of being applicable in presence of ammonia. Its advantage over litmus because no intermediate colours appear on change.

**SIR J. T. BRUNNER ON THE ADVANTAGES OF MASTER TRADE.**—Prizes and certificates were distributed recently to students of the Northwich Science and Art classes by Sir J. Brunner, M.P., who said he was delighted to know that the parents of the elementary schools in the town had recently established a continuation school in order that those who were desirous should continue their education after the ordinary elementary course that they might be the better prepared for the advantage of benefits to be derived from studying under the Technical Instruction Committee. His lengthy experience of business in this country enabled him to assure every boy and girl studying at those schools that there was hardly a trade, from one end of the country to the other, in which there was not a fortune to be made by a man or woman who knew all that there was to be known about it. He regretted that he said it without fear of contradiction, that in a very large measure the trades of this country, whether trades of distribution or of manufacture, were managed by people who knew very little about them. The number of great businesses that were in the hands of men who cared more about fox-hunting, shooting, and fish about their business was very large. If one looked round it seemed as if it were the ambition of well-to-do people in this country to get their children up not to business, but to sport. He could assure a student that there was a great deal of prosperity, an open fortune, to anyone who studied a trade so as to know more than his neighbour.

## Market Reports.

### TAR AND AMMONIA PRODUCTS.

Benzols are firm, 50's being quoted 2s. 2d. to 2s. 3d., and 2s. 1½d. to 2s. 2d. Crude carbolic acid, 60%, keeps steady at 2s. 4½d., but 40% crystals are rather easier at 8½d. Crude is quoted 9d., and solvent, 1s. 6d. Creosote and anthracene without change. Pitch is quiet, at 34s., f.o.b. East Coast.



state of ammonia is very weak, and although there is plenty at very low rates, there is apparently no improvement in the d. Beekton is quoted £8. 5s.; London outside makes: ool and Hull, £8. 7s. 6d.; Leith, £8. 6s. 3d.

### REPORT ON MANURE MATERIAL.

re has been only a moderate inquiry, and there is still a want activity which is looked for at this time of the year. The Kingdom seems still determined to wait in regard to purchasing phosphates, but it is reported that business is doing in high qualities for the continent. Crushed East India bones on spot, per ton, ex store, has been paid, and £3. 17s. 6d. to arrive, the price being the quotation for shipment. Bombay bone meal on spot, and for anything near at hand, has been sold at £3. 16s. 3d. £3. 17s. 6d. per ton, and at the close £4. is required for any on spot, and £3. 17s. 6d. to arrive. Owing to the firmer in East Indian bones and meal, the position of River Plate has somewhat improved, and there would be buyers of any of handy size at £3. 15s.—perhaps at £3. 16s. 3d. Nitrate of fairly steady. Spot value is 8s. for good, up to 8s. 1½d. for quality. Due cargoes are worth about 7s. 11¼d. per cwt., y quality. Home-prepared dried blood finds a better sale at per unit, f.o.r. at works.

### LIVERPOOL MINERAL MARKET.

re has been a very good business done this week. Manganese: arcity continues, and the demand is still very strong, therefore, are very firm and advancing. Ground manganese is in very demand, at from £8. to £15., according to quality. niferous iron ore is in good demand, at advanced prices. e ore: Arrivals are only small, whilst good sales have been and prices are firm. Bauxite is in increased demand, and are firm at 20s. for firsts, 16s. for seconds, and 12s. for thirds, e well-known Irish Hill brand, f.o.b. shipping port. French Arrivals have been only small, and compared with the strong d insignificant, and prices are accordingly strong, at 70s. to 73s., o 90s., and 100s. to 110s. per ton for the "Angel White" es. Wolfram and scheelite are in rather better demand, and are firm. Arsenic continues very scarce, at £21. to £23. per Fuller's earth is steady, at 50s. for lump, 55s. for ground, and per ton for impalpable powder. Ochres and umbers: There en a good business done, at 60s. to 65s. for ochres, and 40s. to or umber. Barytes: Sulphate remains unchanged, and the d for carbonate continues steady, at 65s. for small, and 80s. for Plumbago is in increased demand for foundry and lubricating es, and prices remain from £6. to £10. per ton, and Ceylon from £15. to £20. per ton, according to qualities. Anti- ore is now in very good demand, and commands a good Pumice stone is steady for very fine ground quality, being done to £7. per ton, and superior lump at £7. 10s. per ton. Bog ady, and prices unchanged. There is a steady and increasing d for some of the rarer minerals such as cerite, euxenite, orthite, e, etc, but these of course are very scarce.

### MISCELLANEOUS CHEMICAL MARKET.

he alkali trade there is a fairly steady bulk of business being The tendency has been rather in the direction of lower prices for soda of late. Nearest spot quotations for quantities may be taken as :—F.o.b. Liverpool, 77%, £9. 7s. 6d.; 74%, £8. 7s. 6d.; £7. 7s. 6d.; 60%, £6. 7s. 6d. per ton. Alkali, 58%, remains £3. 7s. 6d., bags, makers' works. Soda crystals unchanged. te of potash, 4¾d. to 4¾d., and chlorate of soda, 6¾d. to 6¾d. For bleaching powder there is a steady enquiry at £7. soft, f.o.r., and £7. 5s. hardwoods, f.o.b. Liverpool. Sulphate of remains in about the same position—sellers at £18. 10s. to £18. o.b. Potash, caustic and carbonate, continue in good demand, ere is no change in values. Cyanide of potassium, 1s. 2½d. prussiate of potash a shade easier, at 7¾d. to 7¾d., according e. Sulphocyanides in fairly good request, and prices unaltered. ate of lime, brown, business is stagnant, at £4. 10s. to £4. 15s. For grey there is rather more enquiry. Other acetates and acid unchanged. For green copperas there is a stronger d, and with lessened output, prices are firmer. Nitrate of soda dged in value. In miscellaneous chemicals the state of business lly is quiet.

### LIVERPOOL OIL AND COLOUR MARKET.

WEDNESDAY.

OILS.—Palm oil is quiet, the business reported being small. Olive is steady, the price for Malaga being £30. per tun, and for Seville £29. to £29. 10s. Linseed has fallen, and is now in moderate demand, with Liverpool refined at 19s. 9d. to 21s. per cwt., in export casks. Cottonseed is cheaper and quiet, even at the reduction: Liverpool refined is quoted 17s. to 17s. 6d. per cwt. Castor oil is steady, though quiet, at 2½d. to 2½d. per lb. for good seconds Calcutta, and 2½d. to 2½d. per lb. for first pressure French. Tallow is dull and featureless. Resin is in very moderate demand, but there is as yet no change in the price of common; medium stands at 5s. 3d. to 6s., and fine 7s. to 7s. 6d. per cwt. Spirits of turpentine are in fairly good demand at 21s. 3d. per cwt. Petroleum is firmer, particularly for refined: American is quoted 6d. to 7½d., and Russian refined 5½d. to 5½d. per gallon.

COLOURS are steady, without alteration in prices. Ochres: Oxfordshire, common, £10., medium, £12., best, £15. Derbyshire, common, 40s.; medium, 50s., best, 60s.; Welsh, best, 90s., seconds, 50s., and common, 18s.; Irish, Devonshire, 40s. to 45s.; French, J.C., 60s. to 65s.; M.C., 65s. to 67s. 6d. Umber: Turkish quiet; Devonshire, 50s. to 55s. White lead, £16. Red lead unchanged. Venetian red, £6. to £10. Cobalt: Prepared oxide, 9s. 9d.; black, 9s.; blue, 6s. Zaffres: No. 1, 3s. 6d.; No. 2, 2s. 6d. Oxide of iron: Common, £7.; medium, £10.; finest, £20. Zinc oxide, £22. 10s. to £25.

### THE METAL MARKETS.

LONDON, WEDNESDAY.—Pig iron, lower: Scotch warrants closed at 47s. 1d.; Middlesbrough, 38s. 6½d. cash, and hematite, 48s. 6d. Copper, steady: Chili bars, G. O. B.'s and G. M. B.'s, closed at £45. to £45. 5s. cash, and £45. 7s. 6d. to £45. 12s. 6d. three months. Tin, firm: Straits closed at £60. 7s. 6d. to £60. 17s. 6d. cash, and £61. to £61. 10s. three months; Australian, £61. 2s. 6d. English ingots, £64. 10s. Lead: Spanish, £10. 18s. 9d. to £11.; English, £11. 2s. 6d.; Silesian spelter, ordinary, £15. 5s. Nickel, 1s. 2½d. Antimony, £30. Quicksilver: first hands, £6. 17s. 6d.; second hands, £6. 17s. Copper shares, steady: Cape, 2½ to 2½; Copiapo, 2½ to 2½; Libiola, 3 to 3¼; Mason and Barry, 2¼ to 3; Rio Tinto, 17¼ to 17¼; Tharsis, 5 to 5¼.

GLASGOW, WEDNESDAY.—Market flat, with moderate business. Scotch done at 47s. 2d., 47s. 1½d., 47s. 2d., and 47s. 1½d. cash, also at 47s. 4d., 47s. 3½d., and 47s. 4d. one month; closing with buyers at 47s. 1d. cash, sellers ask 47s. 1½d. Cleveland done at 38s. 7d. cash; closing with buyers at 38s. 6½d. cash, sellers ask 38s. 7½d. Cumberland hematite done at 48s. 7d. and 48s. 5½d. cash, also at 48s. 8½d. one month; closing with buyers at 48s. 6d. cash, sellers ask 48s. 7d. Middlesbrough hematite closes with buyers at 46s. 1d. cash, sellers ask 46s. 2d.

### WEST OF SCOTLAND CHEMICALS.

GLASGOW, TUESDAY.

In the staples of the chemical manufacture in this quarter, there is a weakening feeling, and the tendency generally is to the fall, although nominally the Union figures are those quoted. Sulphate of copper seems to have expended its upward force, and has already gone back to the extent of a substantial fall. Quotations for bleaching powder are lower by a shade, and saltcake also is quoted at a lower figure. As a set-off, there is the slightly amended position of sulphate of ammonia, which rallied a little towards the close of the week, fetching £8. 10s., f.o.b. Leith, an improvement of half-a-crown on the bottom value marked a week ago. To-day the price is still £8. 10s. In the section of mineral oils and paraffins also the tone forms an exception to the general dullness. Burning oil is helped by the present firmness of the position in American petroleum, and lubricants also are in good demand; while the solids are in fair inquiry at the reduced values lately ruling.

Chief prices current are:—Soda crystals, £2. 2s. 6d., nett, Tyne; soda ash, 48/56°, £3. 15s. to £4. 15s. nett, Tyne; white alkali, 48/52°, £4. 10s. to £5. nett, Tyne; alum in lump, £5 to £5. 5s. nett, Glasgow; caustic soda, white, 74° £8. 10s., 70/72° £7. 10s., 60/62° £6. 10s., and cream 60/62° £6. 7s. 6d., all nett, Liverpool; bleaching powder, £6. 5s. to £7. nett, Tyne; saltcake, 26s. 6d.; borax, English, refined, £20., and boracic acid, £30. nett, Glasgow; bicarbonate of soda, 5-cwt. casks, £6. 10s., and 1-cwt. casks £6. 15s. nett, Liverpool; bichromate of potash, 4¾d. nett, for Scotch and English deliveries (for export, 4¾d. nett, f.o.b. Glasgow); bichromate of soda, 3¾d. nett, for Scotch and English deliveries (for export, 3¾d. nett, f.o.b. Glasgow); chlorate of potash, 4¾d. less 5%, Liverpool; nitrate of soda, 8s. to



Ss. 3d.; sulphate of ammonia, £8. 10s. prompt, f.o.b. Leith; salammioniac, first and second white, £39. and £37. nett, any port; sulphate of copper, £18. 5s., less 5%, Liverpool; paraffin scale, hard, 1½d., and soft, 1¼d. to 1½d. per lb.; paraffin wax, 120° semi-refined, 2½d. to 2¾d.; paraffin spirit (naphtha), 7½d. per gallon; paraffin oil (burning) No. 1, 6½d., and crystal, 6¼d., at works, for Scotch buyers (English sales about ½d. lower); ditto (lubricating) 865° £5., 885° £5. 10s. to £6., and 890/895° £6. to £6. 10s. Week's imports of sugar at Greenock were 2,000 bags beet refined, and 74,706 bags beet unrefined.

## HULL PAINT, OIL, AND COLOUR REPORT.

TUESDAY.

**OILS.**—The markets continued to fall until the early part of this week, when a reaction set in as regards linseed oil, which at the moment is maintained. The import of linseed during the week has not been so heavy as previous, being only 1,997 quarters, making a total for the year of 100,595 quarters, against 52,683 quarters a year ago. Other imports, compared during the same time a year ago, have been:—Cottonseed, 55,410 tons, against 59,667 tons; rapeseed, 12,959 quarters, against 24,743 quarters; olive oil, 5,014 casks, against 1,892 casks; rape oil, 1,126 casks, against 3,098 casks; oilcakes, 4,815 tons, against 3,604 tons; tallow, 7,840 cwt., against 2,791 cwt.; bones, 2,464 tons, against 1,425 tons; turpentine, 6,220 barrels, against 2,981 barrels. Linseed oil has been rather firmer after touching 18s. 3d.; closes firm at 18s. 6d., paid on the spot. For April-August or September-December there are buyers at same price. Boiled and refined, £1. to £2. per ton extra. Export for the week has been 1,260 cwt. Refined cotton oil easier: Spot offers at 15s. naked, and there are sellers at 15s. 1½d. for next month, or 15s. 7½d. May-August; barrels £1. 10s. and ordinary casks £1. per ton extra. Export for the week of refined oil has been 5,680 cwt. Castor oil from 2½d. per lb. for first pressure. Spirits of turpentine, £1. 1s. 3d. per cwt., in barrels. Olive oil, unchanged. Cod oil, £17. to £21. per ton. Boiled siccativ oil, £13. per ton. Neutral liquid soap, for scouring purposes, £14. Locomotive grease, £12. per ton.

**CAKES.**—Linseed cakes firm: 95% pure, £6. 5s.; Russians, £6.; Americans, £5. 5s. Oil cakes, £5. 5s. per ton. Cotton cakes steady: Best makes, £3. 12s. 6d.; seconds, £3. 10s. Rape cakes: Black Sea, £2. 10s.; East India, £3. 10s. per ton.

**PAINTS.**—The paint trade has a very favourable outlook, with a goodly number of inquiries. The prices are:—White lead and oxide of zinc, unchanged; dry venetian red from £4. per ton; ochres from £3. 15s. per ton, in bags or casks; oxide of iron from £6. per ton; ordinary colours, in oil, from £11. per ton; ready-mixed paints, in tins, from £24. per ton; paint remover from £1. 5s. to £1. 10s. per cwt.

## TYNE CHEMICAL REPORT.

TUESDAY.

There is nothing new to report in chemicals on this side. Shipments continue slow, with only a moderate demand. Bleaching powder, £7. 5s. per ton. 76/77% caustic, £9. 5s. per ton; 70%, £7. 10s. per ton. Sulphur still scarce at £3. 17s. 6d. per ton. Soda crystals, £2. 2s. 6d. per ton, gross weight, locally.

Bleaching powder, softs, £7. 5s. per ton, nett; hard, £7. 10s. per ton, nett; caustic soda, 76/77%, £9. 5s. per ton, nett; do., 70%, £7. 10s. per ton, nett; recovered sulphur, 2 cwt. bags, £3. 17s. 6d. per ton, nett; soda ash, 48%, £3. 15s. per ton, nett; do., 52%, £3. 17s. 6d. per

ton, nett; do., 56%, £4. per ton, nett; alkali, 36%, £4. per ton, nett; white alkali, 48%, £4. 10s. per ton, nett; do. £4. 15s. per ton, nett; do., 52%, £5. per ton, nett; hyposulphate, 5-7 cwt. casks, £6. 5s. per ton, nett; do., 1 cwt. ke per ton, nett; silicate of soda, 75° Tw., £2. 12s. 6d. per ton do., 100° Tw., £3. per ton, nett; do., 140° Tw., £3. per ton, nett; soda crystals, casks, £2. 2s. 6d. per gross weight; do., 2 cwt. bags, £2. 2s. 6d. per ton, nett; chlorate of potash, 5d. per lb., less 6%; pearl har £3. per ton, nett; pure white sulphate of alumina, £3. 1 per ton, nett; blanc fixe, £7. 5s. per ton, nett; chloride of refined crystals, £6. 13s., per ton, nett; do., 90/95%, crude £6. per ton, nett; sulphide of barium, crystals, £4. 15s. per ton carbonate of alumina, £30. per ton, nett; aluminate of soda per ton, nett.

**SALT.**—South Durham salt unaltered at 9s. per ton, f.o.b. T.

**COALS.**—Trade here is very quiet, and prices still continue same low level. To-day's prices are:—Best Northumbrian steam to 8s. 3d. per ton; second qualities, 7s. to 7s. 3d. per ton; steam, 3s. 6d. to 3s. 9d. per ton; bunker coals, unscreened, to 6s. 9d. per ton; gas coals, 7s. to 7s. 3d. per ton; household 10s. to 10s. 6d. per ton; coke, very firm, at 15s. per ton.

## New Companies.

**Stapleton and Co., Ltd.**—CAPITAL, £5,000., in £1. share company has been formed to carry on the business of manure manufacturers, barge owners, etc.

**Schnodica Petroleum Co., Ltd.**—CAPITAL, £5,000., in £1. each. This company has been formed to carry on the business of mineral oil refiners, candle, gas, and soap manufacturers.

**Painting and Cleaning Syndicate, Ltd.**—CAPITAL, £25, £1. shares. This company has been formed to sell and deal in colours, oils, varnishes, chemicals, cements, etc. The subscribers memorandum of association are:—H. Satoris, Kettering; F. C. Ingatestone, Essex, gentleman; D. U. Robins, 8, Esmer Bedford Park, W., clerk; H. F. S. Kemlo, 33, Cecil Park, End, gentleman; R. F. Ball, Theydon Copse, Epping, gent; T. G. Faldo, 29, Cambridge-street, Eccleston-square, gentlemen; Phipps, Rushton Hall, Kettering, gentleman.

**Sedgwick Gunpowder Co., Ltd.**—CAPITAL, £30,000., shares. This company has been formed to acquire and carry business of the Sedgwick Gunpowder Co., at Sedgwick, moreland. The subscribers to the memorandum of association J. A. F. Swinglehurst, Sedgwick, near Kendal, manufacturer; J. A. F. Swinglehurst, Sedgwick, near Kendal; J. C. H. Arnside, Westmoreland, merchant; Mrs. J. C. Hamilton, Westmoreland; Miss J. R. Hamilton, Milnthorpe, Westmoreland; Miss M. P. Hamilton, Milnthorpe, Westmoreland; S. Mc Sedgwick, near Kendal, engineer.

**Petroleum Distributing Co., Ltd.**—CAPITAL, £50,000., shares. This company has been formed to supply and distribute petroleum and its products, etc. The subscribers to the memorandum of association are:—C. L. W. Jackson, Normanby Hall, Middlesbrough, gentleman; C. D. W. Cammell, Sheltons Arms, Yorkshire, gen; P. Tzikos, 109, Jermyn-street, S.W., gentleman; A. Suart, Mary Axe, E.C., shipowner; F. C. Sanders, 2, Kenilworth-road, Ford, E., gentleman; W. Pirrie, Leigham Valley-road, Str gentleman; B. Parker, St. Michael's Rectory, Cornhill, solicitor.

## IMPORTS OF CHEMICAL PRODUCTS

AT

### THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

| LONDON.                  |                      |  |                            |                      |  |                          |                    |                        |                          |
|--------------------------|----------------------|--|----------------------------|----------------------|--|--------------------------|--------------------|------------------------|--------------------------|
| Week ending March 7th.   |                      |  |                            |                      |  |                          |                    |                        |                          |
| <b>Acetate of Lime</b> — |                      |  | <b>Alkali</b> —            |                      |  | Germany, 27 Craven & Co. |                    |                        |                          |
| Germany, 1 pk.           | A. Zumbach & Co.     |  | Belgium, 234 c.            | J. Harrison          |  | <b>Barytes</b> —         |                    |                        |                          |
| U. States, 1,628         | H. Wallace & Co.     |  | <b>Ammonium Chloride</b> — |                      |  | Holland, 45 cks.         | T. & W. Farniloe   | Madagascar, 58         |                          |
| <b>Acetic Acid</b> —     |                      |  | Holland, 8 pks.            | H. Lorenz            |  | Belgium, 40              | J. Kitchin, Ltd.   | Columbia, U.S., 41 c.  |                          |
| Holland, 32 pks.         | A. & M. Zimmermann   |  | <b>Aniline Oil</b> —       |                      |  | Holland, 104             | J. L. Lyon & Co.   | Nicaragua, 59 c.       |                          |
| " 4                      | G. Rahn & Co.        |  | Holland, 1 ck.             | W. H. Carey & Sons   |  | <b>Bromine</b> —         |                    |                        |                          |
| <b>Acids</b> —           |                      |  | <b>Antimony Ore</b> —      |                      |  | Germany, 40 pks.         | A. & M. Zimmermann | Spain, 7               |                          |
| Belgium, 20 pks.         | Smokeless Powder Co. |  | France, 110 t.             | J. Bamber            |  | <b>Camphor</b> —         |                    |                        |                          |
| <b>Albumen</b> —         |                      |  | A. Turkey, 32              | Smith, Sundins & Co. |  | Japan, 64 pks.           | City Coml. Wf. Co. | Singapore, 5           |                          |
| N. Russia, 50 pks.       | National S. S. Co.   |  | <b>Asbestos</b> —          |                      |  | Germany, 100             | H. A. Litchfield   | Natal, 45              |                          |
|                          |                      |  | France, 430                | Girard Frs. & Co.    |  | Hong Kong, 67            | City Coml. Wf. Co. | " 2                    |                          |
|                          |                      |  | Italy, 430                 | Cape Asbestos Co.    |  | <b>Caoutchouc</b> —      |                    |                        |                          |
|                          |                      |  | U. States, 50              | Brit. Asbestos Co.   |  | Penang, 26 c.            | Prop. Bull Wf.     | <b>Carbonic Acid</b> — |                          |
|                          |                      |  |                            |                      |  | Zanzibar, 1              | L. & I. D. Jt. Co. | Holland, 100 pks.      |                          |
|                          |                      |  |                            |                      |  |                          |                    |                        | Germany, 82 Krayser, B.  |
|                          |                      |  |                            |                      |  |                          |                    |                        | <b>Gaster Oil</b> —      |
|                          |                      |  |                            |                      |  |                          |                    |                        | France, 30 brls. Perkins |
|                          |                      |  |                            |                      |  |                          |                    |                        | " 51 Bur                 |
|                          |                      |  |                            |                      |  |                          |                    |                        | " 30 pks.                |
|                          |                      |  |                            |                      |  |                          |                    |                        | " 58                     |



**Caustic Potash—**

France, 40 pks. W. E. Cole  
20 J. Barber & Co.

**Chemicals (otherwise undec.)—**

E. Indies, 7 cks. L. & I. D. Jt. Co.  
Holland, £18 G. Rahn & Co.  
Germany, 7 Pickford & Co.  
17 pks. 53 cs. T. H. Lee  
Holland, 7 L. & I. D. Jt. Co.  
Germany, 6 J. Barber & Co.

" 4 Philipps & Graves  
Belgium, 16 O. Scholzig  
Holland, 20 cks. T. H. Lee  
Belgium, 20 T. Palmer  
Germany, 75 pks. A. & M. Zimmermann  
U. States, 40 Pickford & Co.

**Copper Sulphate—**

Germany, 16 pks. Charles & Fox

**Cream of Tartar—**

France, 10 pks. B. & F. Wf. Co.

**Dextrine—**

Germany, 50 pks. R. G. Hall & Co.

**Dyestuffs—**

U. States, 30 pks. City Coml. Wf. Co.

**Argols**

France, 51 pks. B. & F. Wf. Co.

**Cutch**

Italy, 379 B. Jacob & Sons

**Divi Divi**

E. Indies, 124 pks. L. & I. D. Jt. Co.

**Extracts**

Germany, 300 pks. J. Knill & Co.

**France, 25**

Berensford & Co.

**Austria, 250**

Boutcher, Mortimore, & Co.

**Holland, 9**

R. Baelz & Co.

**U. States, 120**

A. J. Humphrey

**France, 65**

B. & F. Wf. Co.

**Denmark, 5 cs.**

R. T. Turnbull & Co.

**France, 32 drs.**

Carey & Sons

**N. Zealand, 4**

Express Carriers' Co.

**Indigo**

Holland, 12 cts. L. & I. D. Jt. Co.

**" 108**

Ross & Deering

**" 66**

H. J. Perlbach & Co.

**" 13**

Wallace Bros.

**" 5**

Eales, Prince & Co.

**" 129**

Elkan & Co.

**" 46**

F. Huth & Co.

**" 36**

G. Cousens

**" 274**

39 pks. J. Owen

**Greystown, 31 srns.**

Cotesworth & Powell

**E. Indies, 62 cts.**

R. von Glehn & Sons

**" 5**

Seton, Laing & Co.

**" 54**

Croisdale & Co.

**" 9**

Parsons & Keith

**" 23**

Walker, Munie, & Co.

" 139 P. Macfadyen & Co.

" 55 Ernsthausen & Co.

" 12 L. Achard

" 24 Hermann & Co.

" 9 Clyde S. Co.

Germany, 50 bgs. T. H. Lee

E. Indies, 404 L. & I. D. Jt. Co.

" 19 J. Hutton Hall & Co.

" 169 M. Smith

" 79 E. Bower & Co.

" 154 Arbutnot, Latham & Co.

" 4 Leach & Co.

" 28 Lewis & Peat

" 35 Parsons and Keith

" 12 Stutz & Co.

" 45 F. W. Heilgers & Co.

" 34 pks. W. Balchin

" 111 J. Kenyon & Sons

Myrabolams

E. Indies, 1,340 pks. Baxter & Hoare

" 1,797 Darling Bros.

" 70 Dalton & Young

" 1,991 Marshall & French

" 1,991 L. & I. D. Jt. Co.

Shumac

Italy, 250 pks. Bevington & Sons

Tanner's Bark

Natal, 22 L. Boutcher,

Belgium, 33 Mortimore & Co.

Natal, 13 Leach & Co.

A. & W. Nesbitt

**Valonia**

E. Turkey, 8 t. F. Claydon & Co.

**Parina**

Holland, 50 pks. R. G. Hall & Co.

N. Russia, 42 M. D. Co.

Germany, 50 Beck & Pollitzer

" 100 Ohlenschlager Bros.

" 40 Dunlop Bros. & Co.

**Glucose—**

Holland, 80 pks. 120 c. J. Barber

U. States, 850 850 Fellows,

" 100 600 Morton & Co.

" 260 260 S. Barrow

" 4,819 4,820 Pearce, Pelly

Holland, 500 500 Ohlenschlager

" 1,000 1,000 E. Dixon

Germany, 50 300 E. & T. Pink

U. States, 250 250 R. G. Hall & Co.

" 250 250 W. Pells

" 640 640 Hilliard & Co.

" 4,499 10,750 L. Norman & Co., Ltd.

" 1,000 1,000 R. G. Hall & Co.

Germany, 400 400 Trier, Meyer

" J. Frank & Ohlmann

**Glue—**

" £1,222

**Litharge—**

Holland, 14 cks. J. Owen

" 7 D. Storer & Sons

**Manure—**

E. Indies, 36 t. F. J. Cornwell, Son,

France, 380 Francis & Co.

Sydney, 2 A. Hunter & Co.

France, 50 C. A. & H. Nichols

Germany, 100 A. Hunter & Co.

" 100 Co-op. Lightgr. Association, Ltd.

U. States, 2 W. H. Mitchell

Germany, 30 J. W. & H. Smith

Sydney, 20 L. & I. D. Jt. Co.

Melbourne, 21 Low, Sons, & Bedford

**Methyl Alcohol—**

Germany, 13 dms. Stein Bros.

Belgium, 10 Lister & Biggs

France, 24 A. Chapman

**Mica—**

E. Indies, £1220 W. M. Smith & Sons

U. States, 340 L. & I. D. Jt. Co.

**Molasses—**

U. States, 100 cks. 500 c. Deering & Robottom

" 1,500 Prop. Sun Wf.

" 1,500 9,000 Day & Martin

" 1,500 8,420 J. Newcomb

" 510 2,800 R. G. Hall & Co.

" 137 755

**Nitre—**

Chili, 14,522 pks. Anglo-Contl. G. Works

" 19,985 W. Montgomery & Co.

**Ochre—**

France, 8 brls. O'Hara & Hoar

" 21 Union Whrs. Co.

Holland, 29 pks. Philipps & Graves

U. States, 28 brls. Taylor Bros.

**Permanganate—**

Holland, 20 pks. Philipps & Graves

**Phosphate Rock—**

Aruba, 434 t. G. M. Baner

U. States, 2,980 Anglo-Contl. G. Wks.

**Pitch—**

U. States, 34 brls. Dussik Bros.

**Plumbago—**

Germany, 53 cks. B. Gallaway

Potassium Bicarbonate—

Holland, 13 pks. A. & M. Zimmermann

Potassium Carbonate—

France, 300 c. Charles & Fox

" 315 Petri Bros.

Germany, 643 W. G. Blagden

Potassium Chloride—

Germany, 200 pks. Bessler, Waechter, & Co.

" 1,050 Anglo-Contl. G. Wks.

Pyrites—

Spain, 550 t. C. L. Vasey & Co.

" 2,071 C. Tennant, Sons, & Co.

**Rosin—**

U. States, 3,872 brls. F. & S. Chiesman

" 175 C. Tennant, Sons, & Co.

**Salicylates—**

Holland, 4 pks. J. Barber & Co.

**Saltpetre—**

E. Indies, 670 bgs. Arracan Co.

Germany, 1,000 C. Wimble & Co.

" 69 cks. P. Hecker & Co.

**Soda Ash—**

Holland, 2,000 c. R. Waters

**Sodium Hyposulphite—**

Holland, 100 pks. Petri Bros.

**Sodium Sulphate—**

Belgium, 30 pks. Berensford & Co.

**Starch—**

Belgium, 460 pks. E. & T. Pink

Holland, 80 Hernu, Peron, & Co.

" 40 G. Rahn & Co.

Belgium, 231 F. Claydon & Co.

" 522 T. H. Lee

Germany, 50 J. Hall, jr., & Co.

" 117 Seaward Bros.

Holland, 754 A. Stawck

" 145 Philipps & Graves

Belgium, 30 Leach & Co.

" 40 Sawyer, Sons, & Co.

France, 127 B. & F. Wf. Co.

Holland, 1,642 Little & Johnston

" 800 Vokins & Co.

Austria, 50 J. Barber & Co.

**Stearine—**

France, 100 bgs. G. Boor & Co.

" 74 sks. Berensford & Co.

U. States, 10 cks. L. & I. D. Jt. Co.

Holland, 16 J. Owen

France, 130 sks. H. Walbaum & Tosetti

" 20 J. Goddard & Co.

**Sulphur—**

Italy, 10 t. Smith & Co.

**Tartaric Acid—**

Holland, 15 pks. B. & F. Wf. Co.

France, 11 "

**Tartars—**

Italy, 10 pks. Fellows, Morton,

" 22 & Co.

B. Jacob & Sons

**Ultramarine—**

Holland, 20 cs. Haefner, Hilpert,

" 4 cks. & Co.

Germany, 17 pks. Philipps & Graves

" 51 L. & I. D. Jt. Co.

U. States, 4 cs. Philipps & Graves

" 11 brls. London Parcels

Belgium, 18 pks. Delivery Co.

France, 20 cks. W. Harrison & Co.

" H. Kohnstamm

**Varnish—**

Germany, 4 pks. T. H. Lee

Belgium, 1 Stobbs, Wilson, & Co.

U. States, 40 Taylor Bros.

**Verdigris—**

France, £10 4 pks. B. & F. Wf. Co.

**White Lead—**

Belgium, 2 cks. Leach & Co.

" 2 F. G. Clifford

Germany, 26 M. Ashby, Ltd.

France, 1 J. L. Lyon & Co.

Holland, 55 Randall Bros.

" 20 A. & M. Zimmermann

Belgium, 10 Sawyer, Sons, & Co.

Germany, 13 Alder & Co.

France, 18 J. Watt & Son

Holland, 28 Burrell & Co.

Wood Pulp—

Norway, 1,200 pks. E. J. & W. Goldsmith

Sweden, 102 bls. Ross & Deering



|                    |          |                       |
|--------------------|----------|-----------------------|
| <b>Tricloro-</b>   |          |                       |
| Bordeaux,          | 2 cs.    |                       |
| St. John, N.B.,    | 1 kg.    |                       |
| <b>Vanilic-</b>    |          |                       |
| New York,          | 20 brls. | S. Fox & Co.          |
| "                  | 5        |                       |
| Rotterdam,         | 2 cks.   |                       |
| <b>Verdigris-</b>  |          |                       |
| Bordeaux,          | 4 cks.   |                       |
| <b>Wood Pulp-</b>  |          |                       |
| Christiania,       | 600 bls. | Ansing & Co., Ltd.    |
| Essexburg,         | 48       |                       |
| "                  | 49 pks.  | G. Schenkewald        |
| "                  | 31       | W. Ibbotson, jun.     |
| "                  | 8        | Bahr, Behrensi & Ross |
| Hamburg,           | 80       |                       |
| <b>Zinc Oxide-</b> |          |                       |
| Hart,              | 10 brls. | Cunard S.S. Co., Ltd. |

**MANCHESTER.**

Week ending March 7th.

|                          |           |                           |
|--------------------------|-----------|---------------------------|
| <b>Alumina-</b>          |           |                           |
| Essexburg,               | 10 cs.    |                           |
| <b>Barium Sulphate-</b>  |           |                           |
| Rotterdam,               | 29 cks.   |                           |
| <b>Ammonium Acetate-</b> |           |                           |
| Rotterdam,               | 6 brls.   |                           |
| <b>Antimony Oxalate-</b> |           |                           |
| Rotterdam,               | 4 cks.    |                           |
| <b>Barytes-</b>          |           |                           |
| Rotterdam,               | 3 cks.    |                           |
| Antwerp,                 | 8 b.l.s.  |                           |
| <b>Bone Ash-</b>         |           |                           |
| Rio Grande do Sul,       | qty.      |                           |
| <b>Colours-</b>          |           |                           |
| Antwerp,                 | 9 kgs.    | 2 cs.                     |
| Hamburg,                 | 6         |                           |
| Rotterdam,               | 37 cks.   | 57 10 bxs.                |
| 131 brls.                |           |                           |
| <b>Cream of Tartar-</b>  |           |                           |
| Rotterdam,               | 20 cks.   |                           |
| <b>Extracts-</b>         |           |                           |
| Rotterdam,               | 5 kgs.    |                           |
| Antwerp,                 | 6 brls.   |                           |
| Treport,                 | 15 cks.   | 23 cs. J. Harrison        |
| <b>Dextrine-</b>         |           |                           |
| Hamburg,                 | 70 bgs.   |                           |
| <b>Farina-</b>           |           |                           |
| Hamburg,                 | 200 bgs.  |                           |
| Stettin,                 | 350       | Browne, Geveke & Co.      |
| 770                      |           |                           |
| <b>Glucose-</b>          |           |                           |
| New York,                | 100 brls. |                           |
| <b>Glue-</b>             |           |                           |
| Rotterdam,               | 100 bgs.  | 1 ck.                     |
| Antwerp,                 | 20        | 20 bls.                   |
| Hamburg,                 |           |                           |
| <b>Lithopone-</b>        |           |                           |
| Stettin,                 | 22 cks.   |                           |
| <b>Manganese Ore-</b>    |           |                           |
| Talpa,                   | 467 t.    |                           |
| <b>Pitch-</b>            |           |                           |
| Hamburg,                 | 80 brls.  |                           |
| <b>Quartz-</b>           |           |                           |
| Antwerp,                 | 8 brls.   |                           |
| <b>Prussiate-</b>        |           |                           |
| Antwerp,                 | 1 ck.     |                           |
| 1,380 t.                 |           |                           |
| <b>Sulphate-</b>         |           |                           |
| Antwerp,                 | 10 cks.   |                           |
| 20 cs.                   |           |                           |
| <b>Nitrate-</b>          |           |                           |
| Antwerp,                 | 50 cks.   |                           |
| 120 cs.                  |           |                           |
| 10 J. T. Fletcher & Co.  |           |                           |
| 154                      |           |                           |
| 306 bgs.                 |           | T. M. Duche & Sons        |
| 13 bgs.                  |           |                           |
| 150 cs.                  |           | Co-op. W'sale Society Co. |
| <b>Acid-</b>             |           |                           |
| Antwerp,                 | 8 cks.    |                           |
| 12 cks.                  |           | 3 cs.                     |

|                    |          |  |
|--------------------|----------|--|
| <b>Wood Pulp-</b>  |          |  |
| Drummen,           | 22 bls.  |  |
| Christiania,       | 1,410    |  |
| Skein,             | 1,546    |  |
| <b>Zinc Oxide-</b> |          |  |
| Antwerp,           | 15 brls. |  |
| New York,          | 100      |  |
| <b>Zinc White-</b> |          |  |
| Rotterdam,         | 45 cks.  |  |

**HULL.**

Week ending March 7th.

|                                      |          |                                         |
|--------------------------------------|----------|-----------------------------------------|
| <b>Alizarine-</b>                    |          |                                         |
| Rotterdam,                           | 51 cks.  | 29 brls. W. & C. L. Kingrose            |
| 40 pks.                              |          |                                         |
| <b>Alum-</b>                         |          |                                         |
| Rotterdam,                           | 38 cks.  | W. & C. L. Kingrose                     |
| <b>Arsenic-</b>                      |          |                                         |
| Hamburg,                             | 1 kg.    |                                         |
| <b>Asbestos-</b>                     |          |                                         |
| Rotterdam,                           | 5 bls.   | Hutchinson & Son                        |
| <b>Barytes-</b>                      |          |                                         |
| Rotterdam,                           | 23 cks.  | W. & C. L. Kingrose                     |
| Antwerp,                             | 13       | Bailey & Leatham                        |
| Bremen,                              | 12       |                                         |
| Antwerp,                             | 200 bgs. |                                         |
| Rotterdam,                           | 47       | Hutchinson & Son                        |
| <b>Chemicals (otherwise unass.)-</b> |          |                                         |
| Bremen,                              | 17 pks.  | Veltmann & Co.                          |
| Hamburg,                             | 35 cks.  | 6 cs. 60 kgs. Wilson, Sons, & Co., Ltd. |
| <b>Colours-</b>                      |          |                                         |
| Hamburg,                             | 1 cs.    | Wilson, Sons, & Co., Ltd.               |
| Ghent,                               | 30 cks.  |                                         |
| Antwerp,                             | 20 bgs.  | Bailey & Leatham                        |
| "                                    | 9 cks.   | 58 pks. Wilson, Sons, & Co., Ltd.       |
| Bremen,                              | 5        | Bailey & Leatham                        |
| Danzig,                              | 34       | Wilson, Sons, & Co., Ltd.               |
| Rotterdam,                           | 1        |                                         |
| Amsterdam,                           | 3        | Hutchinson & Son                        |
| Rotterdam,                           | 7        |                                         |
| "                                    | 8        | 14 pks. 26 bxs. W. & C. L. Kingrose     |
| 96 brls.                             |          |                                         |
| <b>Dextrine-</b>                     |          |                                         |
| Stettin,                             | 410 bgs. | Wilson, Sons, & Co., Ltd.               |
| Harlingen,                           | 50 bls.  | Hutchinson & Son                        |
| <b>Farina-</b>                       |          |                                         |
| Stettin,                             | 348 bgs. | Wilson, Sons, & Co., Ltd.               |
| Ghent,                               | 158 cs.  | "                                       |
| Hamburg,                             | 200 bgs. | "                                       |
| <b>Glucose-</b>                      |          |                                         |
| Amsterdam,                           | 50 bgs.  | Hutchinson & Son                        |
| <b>Glue-</b>                         |          |                                         |
| Rotterdam,                           | 10 bgs.  | W. & C. L. Kingrose                     |
| Kouen,                               | 57 bls.  | 53 cks. 20 bgs. Rawson & Robinson       |
| 10 cs.                               |          |                                         |
| Dunkirk,                             | 155      | Wilson, Sons, & Co., Ltd.               |
| <b>Manganese-</b>                    |          |                                         |
| Hamburg,                             | 38 bgs.  | Wilson, Sons, & Co., Ltd.               |
| <b>Mica-</b>                         |          |                                         |
| Antwerp,                             | 2 cks.   | Bailey & Leatham                        |
| <b>Phosphate-</b>                    |          |                                         |
| Ghent,                               | 260 t.   | 262 bgs. Wilson, Sons, & Co., Ltd.      |
| <b>Phosphate Rock-</b>               |          |                                         |
| Pt. Royal, S.C.,                     | 2,710 t. |                                         |
| <b>Pitch-</b>                        |          |                                         |
| Antwerp,                             | 20 cks.  | Bailey & Leatham                        |
| "                                    | 2        | H. F. Pudsey                            |
| Amsterdam,                           | 15       | W. & C. L. Kingrose                     |
| <b>Potash-</b>                       |          |                                         |
| Antwerp,                             | 5 cks.   | Bailey & Leatham                        |
| Dunkirk,                             | 65 dms.  | Wilson, Sons, & Co., Ltd.               |
| Antwerp,                             | 18 pks.  | "                                       |
| <b>Quicksilver-</b>                  |          |                                         |
| Hamburg,                             | 8 bls.   | Wilson, Sons, & Co., Ltd.               |
| <b>Starch-</b>                       |          |                                         |
| Antwerp,                             | 20 cs.   | Bailey & Leatham                        |

|            |       |                                   |
|------------|-------|-----------------------------------|
| Bremen,    | 1,629 | Veltmann & Co.                    |
| Rotterdam, | 20    | Hutchinson & Son                  |
| Antwerp,   | 68    | 40 pks. Wilson, Sons, & Co., Ltd. |

|                     |          |                           |
|---------------------|----------|---------------------------|
| <b>Tar-</b>         |          |                           |
| Danzig,             | 47 cks.  |                           |
| <b>Turpentine-</b>  |          |                           |
| Libau,              | 53 brls. |                           |
| <b>Ultramarine-</b> |          |                           |
| Bremen,             | 14 cks.  |                           |
| Rotterdam,          | 1        | Hutchinson & Son          |
| <b>Waste Salt-</b>  |          |                           |
| Hamburg,            | 520 bgs. |                           |
| <b>White Lead-</b>  |          |                           |
| Rotterdam,          | 67 cks.  | W. & C. L. Kingrose       |
| Antwerp,            | 23       | Bailey & Leatham          |
| <b>Wood Pulp-</b>   |          |                           |
| Gothenburg,         | 720 bls. | Wilson, Sons, & Co., Ltd. |
| Dronheim,           | 480      | 241 pks. "                |
| Bergen,             | 1,593    |                           |
| Christiania,        | 657      | J. Good & Sons            |
| Hango,              |          |                           |
| <b>Zinc Ashes-</b>  |          |                           |
| Antwerp,            | 10 cks.  | Bailey & Leatham          |
| <b>Zinc Oxide-</b>  |          |                           |
| Antwerp,            | 25 cks.  | Bailey & Leatham          |

**GLASGOW.**

Week ending March 12th.

|                         |           |                                |
|-------------------------|-----------|--------------------------------|
| <b>Aniline-</b>         |           |                                |
| Amsterdam,              | 1 ck.     |                                |
| <b>Asbestos-</b>        |           |                                |
| Boston,                 | 224 bgs.  |                                |
| <b>Barium Sulphate-</b> |           |                                |
| Antwerp,                | 250 bgs.  |                                |
| <b>Barytes-</b>         |           |                                |
| Rotterdam,              | 45 cks.   | J. Rankine & Son               |
| Hamburg,                | 50        | 100 bgs.                       |
| Rotterdam,              | 200 pks.  |                                |
| <b>Castor Oil-</b>      |           |                                |
| Antwerp,                | 28 cks.   |                                |
| Marseilles,             | 126       |                                |
| <b>Colours-</b>         |           |                                |
| Rotterdam,              | 22 cks.   | 1 cs. 8 bxs. J. Rankine & Son  |
| Hamburg,                | 13        | 2                              |
| Rotterdam,              | 82 pks.   |                                |
| <b>Dyestuffs-</b>       |           |                                |
| Alizarine               |           |                                |
| Rotterdam,              | 11 brls.  | 45 cks. 1 bx. J. Rankine & Son |
| 39 pks.                 |           |                                |
| <b>Extracts</b>         |           |                                |
| New York,               | 30 brls.  |                                |
| Marseilles,             | 50        |                                |
| <b>Myrabolams</b>       |           |                                |
| Bombay,                 | 666 bgs.  |                                |
| <b>Farina-</b>          |           |                                |
| Hamburg,                | 100 bgs.  |                                |
| <b>Glue-</b>            |           |                                |
| Boston,                 | 5 brls.   |                                |
| <b>Manganese-</b>       |           |                                |
| Hamburg,                | 1 ck.     |                                |
| <b>Manure-</b>          |           |                                |
| Rotterdam,              | 63 cks.   | J. Rankine & Son               |
| <b>Ochre-</b>           |           |                                |
| Marseilles,             | 43 brls.  |                                |
| <b>Paint-</b>           |           |                                |
| New York,               | 153 kgs.  |                                |
| <b>Paraffin Scale-</b>  |           |                                |
| New York,               | 475 brls. |                                |
| <b>Potash-</b>          |           |                                |
| Rotterdam,              | 20 cks.   | J. Rankine & Son               |
| Hamburg,                | 40        |                                |
| <b>Pyrates-</b>         |           |                                |
| Huelva,                 | 3,651 t.  | Tharsis Co.                    |
| <b>Saltpetre-</b>       |           |                                |
| Hamburg,                | 28 cks.   | 20 kgs.                        |
| <b>Starch-</b>          |           |                                |
| Amsterdam,              | 40 bxs.   |                                |
| Antwerp,                | 400 bgs.  |                                |
| Rotterdam,              | 100 cs.   |                                |
| 12 cks.                 |           | J. Rankine & Son               |
| <b>Stearine-</b>        |           |                                |
| Amsterdam,              | 124 bgs.  |                                |
| <b>Tartaric Acid-</b>   |           |                                |
| Marseilles,             | 11 brls.  |                                |

|                  |          |  |
|------------------|----------|--|
| <b>Tricloro-</b> |          |  |
| New York,        | 50 brls. |  |
| Rotterdam,       | qty.     |  |

|                    |            |       |
|--------------------|------------|-------|
| <b>Waste Salt-</b> |            |       |
| Hamburg,           | 100 t.     |       |
| <b>White Lead-</b> |            |       |
| Rotterdam,         | 148 cks.   | J. I. |
| Antwerp,           | 5          |       |
| <b>Wood Pulp-</b>  |            |       |
| Christiania,       | 3,202 bls. |       |
| <b>Zinc Oxide-</b> |            |       |
| New York,          | 28 brls.   |       |
| <b>Zinc White-</b> |            |       |
| Rotterdam,         | 210 cks.   | J. I. |

**TYNE.**

Week ending March 7th.

|                         |          |             |
|-------------------------|----------|-------------|
| <b>Acetic Acid-</b>     |          |             |
| Rotterdam,              | 6 cks.   | Tyne S      |
| <b>Alum Earth-</b>      |          |             |
| Hamburg,                | 17 cks.  | Tyne S      |
| <b>Barium Chloride-</b> |          |             |
| Rotterdam,              | 300 bgs. | Tyne S      |
| <b>Barytes-</b>         |          |             |
| Rotterdam,              | 46 cks.  | Tyne S      |
| Antwerp,                | 184 bgs. | "           |
| <b>Cod Oil-</b>         |          |             |
| Bergen,                 | 10 brls. |             |
| Trondhjem,              | 10       |             |
| <b>Colours-</b>         |          |             |
| Rotterdam,              | 1 bx.    | Tyne S      |
| Hamburg,                | 5 cks.   |             |
| <b>Glue-</b>            |          |             |
| Rotterdam,              | 6 cs.    | 6 bgs. S    |
| Antwerp,                | 1 ck.    | 22          |
| <b>Limestone-</b>       |          |             |
| Antwerp,                | 5 crts.  | Tyne S      |
| <b>Paint-</b>           |          |             |
| Hamburg,                | 4 dms.   | Tyne S      |
| <b>Pitch-</b>           |          |             |
| Rotterdam,              | 11 cks.  | Tyne S      |
| Amsterdam,              | 12       | W. Swanston |
| <b>Pyrates-</b>         |          |             |
| Huelva,                 | 4,534 t. | See         |
| <b>Soap-</b>            |          |             |
| Rotterdam,              | 5 cs.    | Tyne S      |
| <b>Soda-</b>            |          |             |
| Rotterdam,              | 40 brls. | Tyne S      |
| <b>Starch-</b>          |          |             |
| Rotterdam,              | 12 cs.   | Tyne S      |
| Antwerp,                | 40       | "           |
| <b>Tartaric Acid-</b>   |          |             |
| Rotterdam,              | 6 cks.   | Tyne S      |
| <b>Varnish-</b>         |          |             |
| Antwerp,                | 1 btl.   | Tyne S      |
| <b>White Lead-</b>      |          |             |
| Antwerp,                | 5 brls.  | Tyne S      |
| <b>Wood Pulp-</b>       |          |             |
| Gothenburg,             | 120 bls. |             |
| <b>Zinc Oxide-</b>      |          |             |
| Antwerp,                | 25 brls. | Tyne S      |

**GOOLE.**

Week ending March 7th.

|                                      |          |            |
|--------------------------------------|----------|------------|
| <b>Alizarine-</b>                    |          |            |
| Rotterdam,                           | 52 brls. |            |
| <b>Alkali-</b>                       |          |            |
| Calais,                              | 9 cks.   |            |
| <b>Anthracene-</b>                   |          |            |
| Boulogne,                            | 2 cks.   |            |
| <b>Caoutchouc-</b>                   |          |            |
| Boulogne,                            | 7 cks.   |            |
| <b>Colours-</b>                      |          |            |
| Ghent,                               | 26 brls. | 2          |
| Hamburg,                             | 64 cks.  | 2          |
| <b>Dyestuffs (otherwise unass.)-</b> |          |            |
| Rotterdam,                           | 121 cks. | 4          |
| Boulogne,                            | 10       | 47 pks. 15 |
| Antwerp,                             |          | 4          |
| <b>Farina-</b>                       |          |            |
| Hamburg,                             | 400 bgs. |            |
| <b>Glue-</b>                         |          |            |
| Rotterdam,                           | 10 bgs.  |            |
| <b>Logwood-</b>                      |          |            |
| Belize,                              | 877 t.   |            |
| Jamaica,                             | 537      |            |
| <b>Potash-</b>                       |          |            |
| Antwerp,                             | 4 brls.  | 8 cs.      |



|                                                                         |                                           |                                                                                           |                                                       |
|-------------------------------------------------------------------------|-------------------------------------------|-------------------------------------------------------------------------------------------|-------------------------------------------------------|
| <b>Saltpetre</b> —<br>Rotterdam, 100 bgs.<br>Hamburg, 85<br>Antwerp, 85 | <b>Wood Pulp</b> —<br>Rotterdam, 52 bls.  | Hamburg, 9<br>Antwerp, 1 pk.                                                              | Rotterdam, 100 bgs.<br>Hamburg, 54                    |
| <b>Sodium Silicate</b> —<br>Rotterdam, 4 cks.                           | <b>GRIMSBY.</b><br>Week ending March 7th. | <b>Chemicals (otherwise undescribed)</b><br>Hamburg, 1 ck. 10 cs. 6 pks.<br>Rotterdam, 10 | <b>Dyes</b> —<br>Antwerp, 90 pks.<br>Rotterdam, 1 ck. |
| <b>Starch</b> —<br>Ghent, 60 cs.                                        | <b>Caoutchouc</b> —<br>Rotterdam, 5 cs.   | <b>Colours</b> —<br>Antwerp, 9 cks. 25 cs.                                                | <b>Starch</b> —<br>Antwerp, 2 bgs.                    |

## EXPORTS OF CHEMICAL PRODUCTS OF THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

**LONDON.**

Week ending March 11th.

|                                                      |                                                                                                                                                                                         |                                                                                                              |                                                                                             |                                                                                                                                                                                                                  |                                                                             |                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                 |                                                                      |                                                  |                                                     |                                                |                                                  |                                                                                                |                                                  |                                                     |                                                                                                                                              |
|------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|--------------------------------------------------|-----------------------------------------------------|------------------------------------------------|--------------------------------------------------|------------------------------------------------------------------------------------------------|--------------------------------------------------|-----------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Acids</b> —<br>Natal, 30 cs. £56<br>Madras, 17 20 | <b>Creosote</b><br>Dieppe, 23,500 galls. £123<br><b>Naphtha</b><br>Melbourne, 20 pks. £26<br><b>Naphthaline</b><br>Rotterdam, 617 bgs. £140<br>St. John, 8 cks. 11                      | <b>Alkali</b> —<br>Algoa Bay, 2 t. 16 c. £64<br>Montreal, 5 10                                               | <b>Ammonia</b> —<br>B. Ayres, 25 drs. 4 c. £10<br>Bombay, 25 drs. 50<br>Singapore, 2 cs. 42 | <b>Pitch</b><br>Varna, 80 brls. £27<br>Alexandria, 100 36<br>Shanghai, 40 39<br>Antwerp, 1,600 t. 3,003<br>Boston, 250 145<br>Dunkirk, 2,730 5,144                                                               | <b>Ammonium Carbonate</b><br>B. Ayres, 4 c. £10                             | <b>Ammonium Chloride</b> —<br>Varna, 1 t. 15 c. £61<br>Calcutta, 5 cks. 15<br>Hio, 1 61                                                                                                                                                              | <b>Ammonium Sulphate</b> —<br>Rotterdam, 50 t. £450<br>Sourabaya, 400 4,000<br>Tegal, 409 3,681<br>Samarang, 450 4,770<br>Pecalongan, 134 1,206<br>Canaria, 14 184<br>Martinique, 75 675<br>Philadelphia, 100 838<br>Ostend, 610 5,399<br>Bremen, 250 2,250<br>Hamburg, 100 850                                                                                                                                                                                                                                                                                     | <b>Ammonium Sulphate</b> —<br>Rotterdam, 50 t. £450<br>Sourabaya, 400 4,000<br>Tegal, 409 3,681<br>Samarang, 450 4,770<br>Pecalongan, 134 1,206<br>Canaria, 14 184<br>Martinique, 75 675<br>Philadelphia, 100 838<br>Ostend, 610 5,399<br>Bremen, 250 2,250<br>Hamburg, 100 850 |                                                                      |                                                  |                                                     |                                                |                                                  |                                                                                                |                                                  |                                                     |                                                                                                                                              |
| <b>Barium Nitrate</b> —<br>Hamilton, Ont., 17 c. £16 | <b>Coal Products (otherwise undec.)</b> —<br>Melbourne, 22 drs 10 runs. £34                                                                                                             | <b>Bleaching Powder</b> —<br>Natal, 1 t. £12                                                                 | <b>Borax</b> —<br>Sydney, 2 t. 5 c. £44<br>Brisbane, 3 81                                   | <b>Copper Sulphate</b> —<br>B. Ayres, 10 c. £10<br>Trepport, 10 t. 160<br>Paris, 135 2,345                                                                                                                       | <b>Soda</b> —<br>Algoa Bay, 1 t. 10 c. £5<br>Rotterdam, 5 30                | <b>Soda Ash</b> —<br>Lyttelton, 5 t. 14 c. £31                                                                                                                                                                                                       | <b>Soda Crystals</b> —<br>Delagoa Bay, 2 t. 10 c. £8<br>Shanghai, 2 14 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <b>Soda Salts</b> —<br>Kurrachee, 2 t. 10 c. £25                                                                                                                                                                                                                                | <b>Sodium Acetate</b> —<br>Sydney, 1 t. 8 c. £35<br>Brisbane, 1 7 28 | <b>Sodium Phosphate</b> —<br>Yokohama, 10 c. £11 | <b>Sodium Silicate</b> —<br>Cape Town, 2 t. 4 c. £7 | <b>Sodium Sulphate</b> —<br>Ghent, 100 t. £100 | <b>Strontium Nitrate</b> —<br>Karachi, 4 cs. £14 | <b>Sulphur</b> —<br>Algoa Bay, 50 cs. £17<br>Lisbon, 2 t. 4 c. 402 brls. 299<br>Madeira, 40 27 | <b>Sulphuric Acid</b> —<br>Natal, 1 t. 15 c. £20 | <b>Superphosphates</b> —<br>Martinique, 106 t. £734 | <b>Tartaric Acid</b> —<br>Natal, 5 kgs. 6 c. £37<br>Otago, 5 31<br>Christchurch, 5 31<br>Brisbane, 4 cks 45<br>Hio, 15 96<br>Santander, 5 34 |
| <b>Carbonic Acid Gas</b> —<br>Jersey, 45 tubes £17   | <b>Disinfectants</b> —<br>Jamaica, 50 drs. £44<br>Trinidad, 13 c. 23<br>Sydney, 4 cs. 21<br>Calcutta, 500 28 cks 40<br>Shanghai, 28 cks 40<br>E. London, 60 pks 40<br>Bombay, 20 62 106 | <b>Caustic Soda</b> —<br>Rotterdam, 9 t. 10 c. £80<br>Cape Town, 2 1<br>Algoa Bay, 2 58<br>Townsville, 11 22 | <b>Dried Blood</b> —<br>Catania, 5 t. £34                                                   | <b>Manure</b> —<br>Penang, 5 t. 15 c. £80<br>Rotterdam, 14 15 65<br>Jamaica, 36 360<br>Canaria, 9 10 38<br>Gothenburg, 95 10 210<br>Martinique, 229 916<br>Rouen, 166 510<br>Trinidad, 115 1,265<br>Jersey, 6 26 | <b>Calcium Chloride</b> —<br>Rangoon, 2 t. 2 c. 2 q. £4<br>Odessa, 10 10 23 | <b>Carbolic Acid</b> —<br>Odessa, 11 t. 13 c. 4 q. £83<br>Hong Kong, 1 6 24<br>Rio de Janeiro, 5 17<br>Hamburg, 5 17 109<br>Shanghai, 4 4 7<br>Rotterdam, 8 19 578<br>Rouen, 16 2 214<br>Genoa, 2 11 3 173<br>Bilbao, 19 3 62<br>New York, 4 5 1 243 | <b>Caustic Soda</b> —<br>Alexandria, 36 dms. 112<br>Amsterdam, 230<br>Barcelona, 200<br>Bombay, 200<br>Boston, 45 cks<br>Brantford, 30<br>B. Ayres, 75<br>Calcutta, 36<br>Callao, 220<br>Constantinople, 8<br>Dunkirk, 35<br>Galatz, 156<br>Genoa, 103<br>Hamburg, 130 20 kgs.<br>Ibrail, 104<br>Jaffa, 40<br>Leghorn, 40<br>Melbourne, 77<br>Messina, 10<br>Naples, 35<br>N. Orleans, 110<br>New York qty<br>Odessa, 50<br>Palermo, 5<br>Paris, 35<br>Pernambuco, 10 cs.<br>Philadelphia, 375<br>Punta Arenas, 17<br>Rotterdam, 242<br>Rouen, 31<br>Santander, 115 |                                                                                                                                                                                                                                                                                 |                                                                      |                                                  |                                                     |                                                |                                                  |                                                                                                |                                                  |                                                     |                                                                                                                                              |

**Saltpetre**

|                          |                                    |
|--------------------------|------------------------------------|
| Lisbon, 4 t. £87         | Philadelpha, 15 t. 300             |
| Oporto, 1 16 c. 40       | Galatz, 7 14                       |
| Bombay, 1 10 12          | <b>Ammonium Sulphate</b> —         |
| Christchurch, 1 24       | Valencia, 123 t. 11 c. 3 q. £1,163 |
| Santos, 6 13 159         | St. Nazaire, 10 2 83               |
| Rio de Janeiro, 4 13 111 | Gd. Canary, 20 7 175               |
| Vigo, 2 5 52             | La Pallice, 25 3 215               |
| Pernambuco, 5 14 130     | Santos, 2 4 19                     |
| Bahia, 8 4 195           | Rotterdam, 10 4 83                 |
| Townsville, 1 23         | Las Palmas, 40 5 350               |

**Sheep Dip**

|                                      |                                     |
|--------------------------------------|-------------------------------------|
| B. Ayres, 25 t. 2 c. 198 bgs. £1,138 | <b>Arsenic</b> —<br>Boston, 2 q. £1 |
| Kurrachee, 200 drs. 75               | <b>Bleaching Powder</b> —           |
| Pt. Elizabeth, 4 9 188               | Bombay, 20 cs.                      |
| E. London, 4 600 975                 | Boston, 356 cks.                    |
| Algoa Bay, 5,045 1,240               | Callao, 7 40 bks.                   |

**Soda**

|                          |                           |
|--------------------------|---------------------------|
| Algoa Bay, 1 t. 10 c. £5 | <b>Soda Ash</b> —         |
| Rotterdam, 5 30          | Lyttelton, 5 t. 14 c. £31 |

**Soda Crystals**

|                            |                           |
|----------------------------|---------------------------|
| Delagoa Bay, 2 t. 10 c. £8 | <b>Soda Salts</b> —       |
| Shanghai, 2 14 6           | Kurrachee, 2 t. 10 c. £25 |

**Soda Salts**

|                           |                         |
|---------------------------|-------------------------|
| Kurrachee, 2 t. 10 c. £25 | <b>Sodium Acetate</b> — |
| Sydney, 1 t. 8 c. £35     | Brisbane, 1 7 28        |

**Sodium Phosphate**

|                         |                          |
|-------------------------|--------------------------|
| Yokohama, 10 c. £11     | <b>Sodium Silicate</b> — |
| Cape Town, 2 t. 4 c. £7 | <b>Sodium Sulphate</b> — |

**Strontium Nitrate**

|                       |                                 |
|-----------------------|---------------------------------|
| Karachi, 4 cs. £14    | <b>Sulphur</b> —                |
| Algoa Bay, 50 cs. £17 | Lisbon, 2 t. 4 c. 402 brls. 299 |
| Madeira, 40 27        | <b>Sulphuric Acid</b> —         |

**Superphosphates**

|                         |                        |
|-------------------------|------------------------|
| Martinique, 106 t. £734 | <b>Tartaric Acid</b> — |
| Natal, 5 kgs. 6 c. £37  | Otago, 5 31            |
| Christchurch, 5 31      | Brisbane, 4 cks 45     |
| Hio, 15 96              | Santander, 5 34        |

**Caustic Soda**

|                         |                             |
|-------------------------|-----------------------------|
| Alexandria, 36 dms. 112 | <b>Ammonium Carbonate</b> — |
| Amsterdam, 230          | Naples, 12 c. £18           |
| Barcelona, 200          | <b>Ammonium Chloride</b> —  |
| Bombay, 200             | Montreal, 3 c. £5           |

**Caustic Soda**

|                      |                            |
|----------------------|----------------------------|
| Boston, 45 cks       | <b>Ammonium Chloride</b> — |
| Brantford, 30        | Montreal, 3 c. £5          |
| B. Ayres, 75         |                            |
| Calcutta, 36         |                            |
| Callao, 220          |                            |
| Constantinople, 8    |                            |
| Dunkirk, 35          |                            |
| Galatz, 156          |                            |
| Genoa, 103           |                            |
| Hamburg, 130 20 kgs. |                            |
| Ibrail, 104          |                            |
| Jaffa, 40            |                            |
| Leghorn, 40          |                            |
| Melbourne, 77        |                            |
| Messina, 10          |                            |
| Naples, 35           |                            |
| N. Orleans, 110      |                            |
| New York qty         |                            |
| Odessa, 50           |                            |
| Palermo, 5           |                            |
| Paris, 35            |                            |
| Pernambuco, 10 cs.   |                            |
| Philadelphia, 375    |                            |
| Punta Arenas, 17     |                            |
| Rotterdam, 242       |                            |
| Rouen, 31            |                            |
| Santander, 115       |                            |

**Caustic Soda**

|                         |                            |
|-------------------------|----------------------------|
| Alexandria, 36 dms. 112 | <b>Ammonium Chloride</b> — |
| Amsterdam, 230          | Montreal, 3 c. £5          |
| Barcelona, 200          |                            |
| Bombay, 200             |                            |
| Boston, 45 cks          |                            |
| Brantford, 30           |                            |
| B. Ayres, 75            |                            |
| Calcutta, 36            |                            |
| Callao, 220             |                            |
| Constantinople, 8       |                            |
| Dunkirk, 35             |                            |
| Galatz, 156             |                            |
| Genoa, 103              |                            |
| Hamburg, 130 20 kgs.    |                            |
| Ibrail, 104             |                            |
| Jaffa, 40               |                            |
| Leghorn, 40             |                            |
| Melbourne, 77           |                            |
| Messina, 10             |                            |
| Naples, 35              |                            |
| N. Orleans, 110         |                            |
| New York qty            |                            |
| Odessa, 50              |                            |
| Palermo, 5              |                            |
| Paris, 35               |                            |
| Pernambuco, 10 cs.      |                            |
| Philadelphia, 375       |                            |
| Punta Arenas, 17        |                            |
| Rotterdam, 242          |                            |
| Rouen, 31               |                            |
| Santander, 115          |                            |

**Caustic Soda**

|                         |                            |
|-------------------------|----------------------------|
| Alexandria, 36 dms. 112 | <b>Ammonium Chloride</b> — |
| Amsterdam, 230          | Montreal, 3 c. £5          |
| Barcelona, 200          |                            |
| Bombay, 200             |                            |
| Boston, 45 cks          |                            |
| Brantford, 30           |                            |
| B. Ayres, 75            |                            |
| Calcutta, 36            |                            |
| Callao, 220             |                            |
| Constantinople, 8       |                            |
| Dunkirk, 35             |                            |
| Galatz, 156             |                            |
| Genoa, 103              |                            |
| Hamburg, 130 20 kgs.    |                            |
| Ibrail, 104             |                            |
| Jaffa, 40               |                            |
| Leghorn, 40             |                            |
| Melbourne, 77           |                            |
| Messina, 10             |                            |
| Naples, 35              |                            |
| N. Orleans, 110         |                            |
| New York qty            |                            |
| Odessa, 50              |                            |
| Palermo, 5              |                            |
| Paris, 35               |                            |
| Pernambuco, 10 cs.      |                            |
| Philadelphia, 375       |                            |
| Punta Arenas, 17        |                            |
| Rotterdam, 242          |                            |
| Rouen, 31               |                            |
| Santander, 115          |                            |

**Caustic Soda**

|                         |                            |
|-------------------------|----------------------------|
| Alexandria, 36 dms. 112 | <b>Ammonium Chloride</b> — |
| Amsterdam, 230          | Montreal, 3 c. £5          |
| Barcelona, 200          |                            |
| Bombay, 200             |                            |
| Boston, 45 cks          |                            |
| Brantford, 30           |                            |
| B. Ayres, 75            |                            |
| Calcutta, 36            |                            |
| Callao, 220             |                            |
| Constantinople, 8       |                            |
| Dunkirk, 35             |                            |
| Galatz, 156             |                            |
| Genoa, 103              |                            |
| Hamburg, 130 20 kgs.    |                            |
| Ibrail, 104             |                            |
| Jaffa, 40               |                            |
| Leghorn, 40             |                            |
| Melbourne, 77           |                            |
| Messina, 10             |                            |
| Naples, 35              |                            |
| N. Orleans, 110         |                            |
| New York qty            |                            |
| Odessa, 50              |                            |
| Palermo, 5              |                            |
| Paris, 35               |                            |
| Pernambuco, 10 cs.      |                            |
| Philadelphia, 375       |                            |
| Punta Arenas, 17        |                            |
| Rotterdam, 242          |                            |
| Rouen, 31               |                            |
| Santander, 115          |                            |

**Caustic Soda**

|                         |                            |
|-------------------------|----------------------------|
| Alexandria, 36 dms. 112 | <b>Ammonium Chloride</b> — |
| Amsterdam, 230          | Montreal, 3 c. £5          |
| Barcelona, 200          |                            |
| Bombay, 200             |                            |
| Boston, 45 cks          |                            |
| Brantford, 30           |                            |
| B. Ayres, 75            |                            |
| Calcutta, 36            |                            |
| Callao, 220             |                            |
| Constantinople, 8       |                            |
| Dunkirk, 35             |                            |
| Galatz, 156             |                            |
| Genoa, 103              |                            |
| Hamburg, 130 20 kgs.    |                            |
| Ibrail, 104             |                            |
| Jaffa, 40               |                            |
| Leghorn, 40             |                            |
| Melbourne, 77           |                            |
| Messina, 10             |                            |
| Naples, 35              |                            |
| N. Orleans, 110         |                            |
| New York qty            |                            |
| Odessa, 50              |                            |
| Palermo, 5              |                            |
| Paris, 35               |                            |
| Pernambuco, 10 cs.      |                            |
| Philadelphia, 375       |                            |
| Punta Arenas, 17        |                            |
| Rotterdam, 242          |                            |
| Rouen, 31               |                            |
| Santander, 115          |                            |

**Caustic Soda**

|                         |                            |
|-------------------------|----------------------------|
| Alexandria, 36 dms. 112 | <b>Ammonium Chloride</b> — |
| Amsterdam, 230          | Montreal, 3 c. £5          |
| Barcelona, 200          |                            |
| Bombay, 200             |                            |
| Boston, 45 cks          |                            |
| Brantford, 30           |                            |
| B. Ayres, 75            |                            |
| Calcutta, 36            |                            |
| Callao, 220             |                            |
| Constantinople, 8       |                            |
| Dunkirk, 35             |                            |
| Galatz, 156             |                            |
| Genoa, 103              |                            |
| Hamburg, 130 20 kgs.    |                            |
| Ibrail, 104             |                            |
| Jaffa, 40               |                            |
| Leghorn, 40             |                            |
| Melbourne, 77           |                            |
| Messina, 10             |                            |
| Naples, 35              |                            |
| N. Orleans, 110         |                            |
| New York qty            |                            |
| Odessa, 50              |                            |
| Palermo, 5              |                            |
| Paris, 35               |                            |
| Pernambuco, 10 cs.      |                            |
| Philadelphia, 375       |                            |
| Punta Arenas, 17        |                            |
| Rotterdam, 242          |                            |
| Rouen, 31               |                            |
| Santander, 115          |                            |

**Caustic Soda**

|                         |                            |
|-------------------------|----------------------------|
| Alexandria, 36 dms. 112 | <b>Ammonium Chloride</b> — |
| Amsterdam, 230          | Montreal, 3 c. £5          |
| Barcelona, 200          |                            |
| Bombay, 200             |                            |
| Boston, 45 cks          |                            |
| Brantford, 30           |                            |
| B. Ayres, 75            |                            |
| Calcutta, 36            |                            |
| Callao, 220             |                            |
| Constantinople, 8       |                            |
| Dunkirk, 35             |                            |
| Galatz, 156             |                            |
| Genoa, 103              |                            |
| Hamburg, 130 20 kgs.    |                            |
| Ibrail, 104             |                            |
| Jaffa, 40               |                            |
| Leghorn, 40             |                            |
| Melbourne, 77           |                            |
| Messina, 10             |                            |
| Naples, 35              |                            |
| N. Orleans, 110         |                            |
| New York qty            |                            |
| Odessa, 50              |                            |
| Palermo, 5              |                            |
| Paris, 35               |                            |
| Pernambuco, 10 cs.      |                            |
| Philadelphia, 375       |                            |
| Punta Arenas, 17        |                            |
| Rotterdam, 242          |                            |
| Rouen, 31               |                            |
| Santander, 115          |                            |

**Caustic Soda**

|                         |                            |
|-------------------------|----------------------------|
| Alexandria, 36 dms. 112 | <b>Ammonium Chloride</b> — |
| Amsterdam, 230          | Montreal, 3 c. £5          |
| Barcelona, 200          |                            |
| Bombay, 200             |                            |
| Boston, 45 cks          |                            |
| Brantford, 30           |                            |
| B. Ayres, 75            |                            |
| Calcutta, 36            |                            |
| Callao, 220             |                            |
| Constantinople, 8       |                            |
| Dunkirk, 35             |                            |
| Galatz, 156             |                            |
| Genoa, 103              |                            |
| Hamburg, 130 20 kgs.    |                            |
| Ibrail, 104             |                            |
| Jaffa, 40               |                            |
| Leghorn, 40             |                            |
| Melbourne, 77           |                            |
| Messina, 10             |                            |
| Naples, 35              |                            |
| N. Orleans, 110         |                            |
| New York qty            |                            |
| Odessa, 50              |                            |
| Palermo, 5              |                            |
| Paris, 35               |                            |
| Pernambuco, 10 cs.      |                            |
| Philadelphia, 375       |                            |
| Punta Arenas, 17        |                            |
| Rotterdam, 242          |                            |
| Rouen, 31               |                            |
| Santander, 115          |                            |

**Caustic Soda**

|                         |                            |
|-------------------------|----------------------------|
| Alexandria, 36 dms. 112 | <b>Ammonium Chloride</b> — |
| Amsterdam, 230          | Montreal, 3 c. £5          |
| Barcelona, 200          |                            |
| Bombay, 200             |                            |
| Boston, 45 cks          |                            |
| Brantford, 30           |                            |
| B. Ayres, 75            |                            |
| Calcutta, 36            |                            |
| Callao, 220             |                            |
| Constantinople, 8       |                            |
| Dunkirk, 35             |                            |
| Galatz, 156             |                            |
| Genoa, 103              |                            |
| Hamburg, 130 20 kgs.    |                            |
| Ibrail, 104             |                            |
| Jaffa, 40               |                            |
| Leghorn, 40             |                            |
| Melbourne, 77           |                            |
| Messina, 10             |                            |
| Naples, 35              |                            |
| N. Orleans, 110         |                            |
| New York qty            |                            |
| Odessa, 50              |                            |
| Palermo, 5              |                            |
| Paris, 35               |                            |
| Pernambuco, 10 cs.      |                            |
| Philadelphia, 375       |                            |
| Punta Arenas, 17        |                            |
| Rotterdam, 242          |                            |
| Rouen, 31               |                            |
| Santander, 115          |                            |

**Caustic Soda**

|                         |                            |
|-------------------------|----------------------------|
| Alexandria, 36 dms. 112 | <b>Ammonium Chloride</b> — |
| Amsterdam, 230          | Montreal, 3 c. £5          |
| Barcelona, 200          |                            |
| Bombay, 200             |                            |
| Boston, 45 cks          |                            |
| Brantford, 30           |                            |
| B. Ayres, 75            |                            |
| Calcutta, 36            |                            |
| Callao, 220             |                            |
| Constantinople, 8       |                            |
| Dunkirk, 35             |                            |
| Galatz, 156             |                            |
| Genoa, 103              |                            |
| Hamburg, 130 20 kgs     |                            |



|            |     |          |
|------------|-----|----------|
| Seville,   | 140 | 10 brls. |
| Sourabaya, | 4   |          |
| Susa,      | 155 |          |
| Tampico,   | 50  |          |
| Tarragona, |     | 30       |
| Trieste,   | 75  |          |
| Valencia,  | 50  |          |
| Venice,    | 20  |          |
| Vigo,      | 4   |          |

**Chemicals (otherwise undescribed)**

|               |        |         |
|---------------|--------|---------|
| Naples,       | 4 c.   | £7      |
| Odessa,       | 1 t. 9 | 2 q. 50 |
| Hio,          | 1      | 5 41    |
| Antwerp,      | 1      | 5 9     |
| Rotterdam,    | 1      | 6 49    |
| Stettin,      | 1      | 7 50    |
| Genoa,        | 1      | 7 50    |
| Beyrout,      | 1      | 4 44    |
| Alexandria,   | 1      | 4 37    |
| Philadelphia, | 13     | 425     |
| Calcutta,     | 1      | 10 57   |

**China Clay—**

|                 |         |      |
|-----------------|---------|------|
| Barcelona,      | 10 t.   |      |
| Bombay,         | 90      |      |
| Boston,         | 1,651   |      |
| Calcutta,       | 64      |      |
| Maranham,       | 13      | 2 c. |
| Philadelphia,   | 293     | 15   |
| Rio de Janeiro, | 20 cks. |      |

**Coal Products—**

|                         |       |  |
|-------------------------|-------|--|
| <b>Aniline Colours—</b> |       |  |
| Barcelona,              | 1 cs. |  |
| Shanghai,               | 50    |  |

**Aniline Oil**

|               |         |  |
|---------------|---------|--|
| Genoa,        | 5 dms.  |  |
| Oporto,       | 10 tins |  |
| Philadelphia, | 20 cs.  |  |
| Portland,     | 2       |  |

**Aniline Salts**

|           |       |         |
|-----------|-------|---------|
| Bombay,   | 1 cs. |         |
| Boston,   | 36    | 32 cks. |
| Portland, | 8     |         |

**Anthracene**

|            |             |  |
|------------|-------------|--|
| Rotterdam, | 10 t. 15 c. |  |
|------------|-------------|--|

**Pitch**

|        |       |  |
|--------|-------|--|
| Cette, | 20 t. |  |
|--------|-------|--|

**Tar**

|               |         |              |
|---------------|---------|--------------|
| Rangoon,      | 25 cks. |              |
| Santander,    | 4 brls. |              |
| Sierra Leone, | 10      | 10 bf. brls. |

**Tar Salts**

|         |        |  |
|---------|--------|--|
| Boston, | 8 cks. |  |
|---------|--------|--|

**Copper Nitrate—**

|             |       |          |
|-------------|-------|----------|
| Pernambuco, | 11 c. | 1 q. £33 |
|-------------|-------|----------|

**Copper Sulphate—**

|                 |       |           |
|-----------------|-------|-----------|
| Talcahuano,     | 9 c.  | 3 q. £8   |
| Pernambuco,     | 9     | 1 8       |
| Tampico,        | 20 t. | 1 336     |
| Antwerp,        | 2     | 33        |
| Naples,         | 116   | 6 5 1,752 |
| Constantinople, | 1     | 9 3 8     |
| Hamburg,        | 1     | 4 20      |
| Lisbon,         | 45    | 7 767     |
| Cette,          | 585   | 3 10,265  |
| B. Ayres,       | 18    | 15        |
| Cadiz,          | 10    | 9         |
| Fiume,          | 7     | 7 1 113   |
| Melbourne,      | 2     | 32        |
| Venice,         | 128   | 3 3 1,017 |
| Genoa,          | 37    | 519       |
| Brindisi,       | 17    | 15 274    |
| Leghorn,        | 15    | 1 225     |
| Paris,          | 45    | 2 690     |
| Madras,         | 1     | 5 20      |
| Galatz,         | 3     | 48        |
| Rouen,          | 25    | 5 402     |
| Nantes,         | 8     | 11 137    |
| Bordeaux,       | 17    | 7 270     |
| Valencia,       | 12    | 10 130    |
| Seville,        | 15    | 8 258     |
| Messina,        | 1     | 10 14     |
| Palermo,        | 1     | 10 14     |
| Oporto,         | 34    | 4 1 532   |

**Copperas—**

|             |      |          |
|-------------|------|----------|
| Pernambuco, | 1 t. | 2 q. £3  |
| Madras,     | 3    | 19 c. 35 |
| Gd. Canary, | 5    | 2 11     |
| Kurrachee,  | 27   | 48       |

**Disinfectants—**

|               |         |         |
|---------------|---------|---------|
| Portland, M., | 3 c.    | 2 q. £7 |
| Bombay,       | 3 t. 10 | 23      |
| Alexandria,   | 2       | 1 23    |

**Gelatine—**

|           |          |  |
|-----------|----------|--|
| New York, | 100 bxs. |  |
|-----------|----------|--|

**Iron Acetate—**

|             |            |     |
|-------------|------------|-----|
| Pernambuco, | 1 t. 17 c. | £18 |
|-------------|------------|-----|

**Lime—**

|           |            |      |
|-----------|------------|------|
| Lagos,    | 7 t. 17 c. | £9   |
| Elmina,   | 3          | 5 7  |
| Maranham, | 3          | 15 9 |

**Magnesium Chloride—**

|         |            |    |
|---------|------------|----|
| Bombay, | 1 t. 10 c. | £4 |
|---------|------------|----|

**Magnesium Sulphate—**

|          |          |  |
|----------|----------|--|
| Hamburg, | 6 cs.    |  |
| Seville, | 50 brls. |  |

**Manure—**

|            |        |             |
|------------|--------|-------------|
| Cherbourg, | 480 L. | 2 c. £1,329 |
| New York,  | 1      | 7 23        |

**Oxalic Acid—**

|           |      |     |
|-----------|------|-----|
| Montreal, | 7 c. | £12 |
|-----------|------|-----|

**Paint—**

|             |         |                  |
|-------------|---------|------------------|
| Alexandria, | 34 cks. | 253 kgs. 12 dms. |
|-------------|---------|------------------|

|         |         |  |
|---------|---------|--|
| 4 brls. | 45 tins |  |
|---------|---------|--|

|          |    |           |
|----------|----|-----------|
| Antwerp, | 20 | 60 8 kgs. |
|----------|----|-----------|

|         |     |  |
|---------|-----|--|
| Callao, | 143 |  |
|---------|-----|--|

|                   |    |         |
|-------------------|----|---------|
| Cartagena (N.G.), | 50 | 50 dms. |
|-------------------|----|---------|

|         |    |  |
|---------|----|--|
| Ferrol, | 60 |  |
|---------|----|--|

|            |   |    |
|------------|---|----|
| Gibraltar, | 2 | 22 |
|------------|---|----|

|              |   |  |
|--------------|---|--|
| Grand Bassa, | 3 |  |
|--------------|---|--|

|          |   |    |
|----------|---|----|
| Havanna, | 1 | 30 |
|----------|---|----|

|          |        |     |
|----------|--------|-----|
| Iquique, | 20 cs. | 100 |
|----------|--------|-----|

|         |   |     |
|---------|---|-----|
| Lisbon, | 2 | 204 |
|---------|---|-----|

|          |       |      |
|----------|-------|------|
| Mendoza, | 1 bx. | 12 6 |
|----------|-------|------|

|           |    |     |
|-----------|----|-----|
| New York, | 16 | 300 |
|-----------|----|-----|

|         |    |  |
|---------|----|--|
| Panama, | 25 |  |
|---------|----|--|

|       |       |   |
|-------|-------|---|
| Para, | 1 cs. | 9 |
|-------|-------|---|

|            |       |    |
|------------|-------|----|
| Rotterdam, | 8 cs. | 30 |
|------------|-------|----|

|        |       |     |
|--------|-------|-----|
| Syria, | 1 cs. | 186 |
|--------|-------|-----|

|             |       |  |
|-------------|-------|--|
| Valparaiso, | 8 cs. |  |
|-------------|-------|--|

|            |   |  |
|------------|---|--|
| Vera Cruz, | 1 |  |
|------------|---|--|

|           |   |  |
|-----------|---|--|
| Yokohama, | 1 |  |
|-----------|---|--|

**Painters' Colours—**

|             |          |  |
|-------------|----------|--|
| Alexandria, | 280 cks. |  |
|-------------|----------|--|

|              |          |  |
|--------------|----------|--|
| Antofagasta, | 15 brls. |  |
|--------------|----------|--|

|        |          |            |
|--------|----------|------------|
| Bahia, | 2 cs. 11 | 115 kgs. 4 |
|--------|----------|------------|

|         |   |  |
|---------|---|--|
| Bombay, | 4 |  |
|---------|---|--|

|         |   |  |
|---------|---|--|
| Boston, | 4 |  |
|---------|---|--|

|           |    |  |
|-----------|----|--|
| Calcutta, | 40 |  |
|-----------|----|--|

|            |    |  |
|------------|----|--|
| Cartagena, | 22 |  |
|------------|----|--|

|         |     |  |
|---------|-----|--|
| Galatz, | 100 |  |
|---------|-----|--|

|        |    |  |
|--------|----|--|
| Genoa, | 10 |  |
|--------|----|--|

|          |    |    |
|----------|----|----|
| Hamburg, | 17 | 50 |
|----------|----|----|

|         |    |    |
|---------|----|----|
| Lisbon, | 64 | 40 |
|---------|----|----|

|           |       |  |
|-----------|-------|--|
| Maranham, | 1 cs. |  |
|-----------|-------|--|

|           |    |      |
|-----------|----|------|
| Mayaguez, | 75 | 80 2 |
|-----------|----|------|

|           |    |     |
|-----------|----|-----|
| M. Video, | 15 | 1 4 |
|-----------|----|-----|

|           |        |   |
|-----------|--------|---|
| New York, | 3 tcs. | 4 |
|-----------|--------|---|

|        |        |   |
|--------|--------|---|
| Ponce, | 3 tcs. | 4 |
|--------|--------|---|

|          |   |  |
|----------|---|--|
| Rosario, | 4 |  |
|----------|---|--|

|            |       |  |
|------------|-------|--|
| Rotterdam, | 2 cs. |  |
|------------|-------|--|

|           |   |  |
|-----------|---|--|
| San Juan, | 3 |  |
|-----------|---|--|

|          |   |  |
|----------|---|--|
| Seville, | 5 |  |
|----------|---|--|

|            |    |          |
|------------|----|----------|
| Singapore, | 36 | 284 pks. |
|------------|----|----------|

|             |    |  |
|-------------|----|--|
| Talcahuano, | 44 |  |
|-------------|----|--|

|       |   |  |
|-------|---|--|
| Vigo, | 4 |  |
|-------|---|--|

**Paraffin Wax—**

|                 |       |  |
|-----------------|-------|--|
| Rio de Janeiro, | 4 cs. |  |
|-----------------|-------|--|

**Phosphorus—**

|            |       |      |
|------------|-------|------|
| Vera Cruz, | 15 c. | £165 |
|------------|-------|------|

|      |    |     |
|------|----|-----|
| Hio, | 15 | 150 |
|------|----|-----|

**Picric Acid—**

|           |      |      |
|-----------|------|------|
| New York, | 2 t. | £190 |
|-----------|------|------|

**Potassium Bichromate—**

|             |       |          |
|-------------|-------|----------|
| Pernambuco, | 16 c. | 2 q. £39 |
|-------------|-------|----------|

|        |      |      |
|--------|------|------|
| Ghent, | 2 t. | 2 84 |
|--------|------|------|

|          |    |      |
|----------|----|------|
| Seville, | 18 | 3 40 |
|----------|----|------|

**Potassium Chlorate—**

|            |      |     |
|------------|------|-----|
| Rotterdam, | 1 t. | £55 |
|------------|------|-----|

|          |       |    |
|----------|-------|----|
| Tampico, | 12 c. | 23 |
|----------|-------|----|

|      |    |     |
|------|----|-----|
| Hio, | 10 | 392 |
|------|----|-----|

|            |   |    |
|------------|---|----|
| Vera Cruz, | 5 | 22 |
|------------|---|----|

|           |    |    |
|-----------|----|----|
| Calcutta, | 10 | 83 |
|-----------|----|----|

|              |   |    |
|--------------|---|----|
| Christiania, | 2 | 45 |
|--------------|---|----|

|          |   |     |
|----------|---|-----|
| Corunna, | 1 | 273 |
|----------|---|-----|

|           |   |      |
|-----------|---|------|
| New York, | 7 | 5 64 |
|-----------|---|------|

|              |   |        |
|--------------|---|--------|
| Guadalajara, | 1 | 10 283 |
|--------------|---|--------|

|               |   |    |
|---------------|---|----|
| Philadelphia, | 7 | 10 |
|---------------|---|----|

**Potassium Cyanide—**

|          |      |          |
|----------|------|----------|
| Curacao, | 3 c. | 1 q. £85 |
|----------|------|----------|

**Potassium Prussiate—**

|          |      |          |
|----------|------|----------|
| Antwerp, | 4 c. | 2 q. £15 |
|----------|------|----------|

|        |   |    |
|--------|---|----|
| Genoa, | 5 | 18 |
|--------|---|----|

|         |   |    |
|---------|---|----|
| Lisbon, | 5 | 21 |
|---------|---|----|

**Salt—**

|            |      |  |
|------------|------|--|
| Algoa Bay, | 5 t. |  |
|------------|------|--|

|          |    |  |
|----------|----|--|
| Antwerp, | 50 |  |
|----------|----|--|

|            |     |  |
|------------|-----|--|
| Baltimore, | 350 |  |
|------------|-----|--|

|         |     |  |
|---------|-----|--|
| Boston, | 100 |  |
|---------|-----|--|

|           |    |  |
|-----------|----|--|
| B. Ayres, | 50 |  |
|-----------|----|--|

|         |   |  |
|---------|---|--|
| Callao, | 1 |  |
|---------|---|--|

|              |    |  |
|--------------|----|--|
| Christiania, | 15 |  |
|--------------|----|--|

|        |     |  |
|--------|-----|--|
| Ghent, | 150 |  |
|--------|-----|--|

|            |   |       |
|------------|---|-------|
| Gibraltar, | 1 | 17 c. |
|------------|---|-------|

|             |    |    |
|-------------|----|----|
| Gd. Bassam, | 44 | 12 |
|-------------|----|----|

|          |     |  |
|----------|-----|--|
| Halifax, | 514 |  |
|----------|-----|--|

|         |   |  |
|---------|---|--|
| Manaos, | 8 |  |
|---------|---|--|

|            |     |    |
|------------|-----|----|
| Melbourne, | 263 | 16 |
|------------|-----|----|

|           |    |  |
|-----------|----|--|
| Monrovia, | 10 |  |
|-----------|----|--|

|             |     |    |
|-------------|-----|----|
| N. Orleans, | 149 | 18 |
|-------------|-----|----|

|        |   |  |
|--------|---|--|
| Opobo, | 5 |  |
|--------|---|--|

|       |    |   |
|-------|----|---|
| Para, | 31 | 5 |
|-------|----|---|

**Salt Cake—**

|           |           |     |
|-----------|-----------|-----|
| New York, | 4 t. 1 c. | £73 |
|-----------|-----------|-----|

**Saltpetre—**

|         |           |     |
|---------|-----------|-----|
| Callao, | 3 t. 7 c. | £78 |
|---------|-----------|-----|

|           |     |    |
|-----------|-----|----|
| Maranhao, | 10. | 12 |
|-----------|-----|----|

|                 |     |     |
|-----------------|-----|-----|
| Rio de Janeiro, | 10. | 121 |
|-----------------|-----|-----|

|           |    |    |
|-----------|----|----|
| Maranham, | 11 | 11 |
|-----------|----|----|

|             |   |    |
|-------------|---|----|
| Valparaiso, | 8 | 10 |
|-------------|---|----|

**Soap—**

|       |          |  |
|-------|----------|--|
| Aden, | 100 bxs. |  |
|-------|----------|--|

|        |    |  |
|--------|----|--|
| Accra, | 40 |  |
|--------|----|--|

|             |    |                |
|-------------|----|----------------|
| Alexandria, | 25 | 60 cs. 5 brls. |
|-------------|----|----------------|

|            |       |  |
|------------|-------|--|
| Algoa Bay, | 1,430 |  |
|------------|-------|--|

|        |     |  |
|--------|-----|--|
| Appam, | 150 |  |
|--------|-----|--|

|            |     |  |
|------------|-----|--|
| Barbadoes, | 330 |  |
|------------|-----|--|

|         |     |  |
|---------|-----|--|
| Belize, | 219 |  |
|---------|-----|--|

|        |    |  |
|--------|----|--|
| Beira, | 30 |  |
|--------|----|--|

|         |            |              |
|---------|------------|--------------|
| Bombay, | 2 cks. 515 | 79 250 bdis. |
|---------|------------|--------------|

|        |    |  |
|--------|----|--|
| Bonny, | 56 |  |
|--------|----|--|

|           |     |  |
|-----------|-----|--|
| Calcutta, | 250 |  |
|-----------|-----|--|

|         |    |  |
|---------|----|--|
| Callao, | 10 |  |
|---------|----|--|

|            |     |     |
|------------|-----|-----|
| Cape Town, | 850 | 250 |
|------------|-----|-----|

|              |   |          |
|--------------|---|----------|
| Christiania, | 1 | 50 crts. |
|--------------|---|----------|

|                 |     |  |
|-----------------|-----|--|
| Constantinople, | 300 |  |
|-----------------|-----|--|

|             |     |  |
|-------------|-----|--|
| Copenhagen, | 101 |  |
|-------------|-----|--|

|           |   |  |
|-----------|---|--|
| Coquimbo, | 5 |  |
|-----------|---|--|

|              |       |          |
|--------------|-------|----------|
| Delagoa Bay, | 1,030 | 28 bdis. |
|--------------|-------|----------|

|           |     |  |
|-----------|-----|--|
| Demerara, | 400 |  |
|-----------|-----|--|

|         |     |  |
|---------|-----|--|
| Durban, | 340 |  |
|---------|-----|--|

|          |          |  |
|----------|----------|--|
| Dunkirk, | 13 crts. |  |
|----------|----------|--|

|            |       |  |
|------------|-------|--|
| E. London, | 1,635 |  |
|------------|-------|--|

|               |    |  |
|---------------|----|--|
| Fernando Po., | 43 |  |
|---------------|----|--|

|        |     |  |
|--------|-----|--|
| Genoa, | 125 |  |
|--------|-----|--|

|        |    |  |
|--------|----|--|
| Ghent, | 10 |  |
|--------|----|--|

|            |     |    |
|------------|-----|----|
| Gibraltar, | 200 | 50 |
|------------|-----|----|

|            |   |  |
|------------|---|--|
| Gd. Lahou, | 2 |  |
|------------|---|--|

|            |   |  |
|------------|---|--|
| Kurrachee, | 2 |  |
|------------|---|--|

|            |   |  |
|------------|---|--|
| La Guayra, | 1 |  |
|------------|---|--|

|             |       |  |
|-------------|-------|--|
| Las Palmas, | 1,539 |  |
|-------------|-------|--|

|       |   |  |
|-------|---|--|
| Lima, | 7 |  |
|-------|---|--|



|                                          |         |          |
|------------------------------------------|---------|----------|
| <b>Coal Products (otherwise undes.)—</b> |         |          |
| Rotterdam,                               | 75 cks. | 77 brls. |
| <b>Glue—</b>                             |         |          |
| Antwerp,                                 | 70 cks. |          |
| Rotterdam,                               | 12      |          |
| <b>Linseed Oil—</b>                      |         |          |
| Barcelona,                               | 1 ck.   |          |
| <b>Pitch—</b>                            |         |          |
| Antwerp,                                 | 389 t.  | 11 c.    |
| Cette,                                   | 144     | 12½      |
| <b>Soap—</b>                             |         |          |
| Tantali,                                 | 25 bxs. |          |
| <b>Starch—</b>                           |         |          |
| Bombay,                                  | 6 cks.  |          |
| <b>Tar Salts—</b>                        |         |          |
| Rotterdam,                               | 3 cks.  |          |

**HULL.**

Week ending March 7th.

|                                           |          |              |
|-------------------------------------------|----------|--------------|
| <b>Alkali—</b>                            |          |              |
| Bremen,                                   | 120 bgs. |              |
| <b>Ammonium Sulphate—</b>                 |          |              |
| Dunkirk,                                  | 534 bgs. |              |
| Ghent,                                    | 980      |              |
| Stettin,                                  | 500      |              |
| <b>Bleaching Powder—</b>                  |          |              |
| Bombay,                                   | 70 dms.  |              |
| Stettin,                                  | 38 cks.  |              |
| <b>Caustic Soda—</b>                      |          |              |
| Bombay,                                   | 10 dms.  |              |
| Hango,                                    | 21       |              |
| <b>Chemicals (otherwise undescribed)</b>  |          |              |
| Amsterdam,                                | 3 cks.   | 35 pks.      |
| Antwerp,                                  | 7        | 28 cs.       |
| Bombay,                                   | 1,233    | 20           |
| Copenhagen,                               | 4        | 5            |
| Christiania,                              | 5        | 850 lbs.     |
| Drontheim,                                | 1        | 13 pks.      |
| Ghent,                                    | 1        |              |
| Gothenburg,                               | 13       | 10           |
| Hamburg,                                  | 49       | 130          |
| Hango,                                    | 4        | 7            |
| Kurrachee,                                | 362      | 50           |
| Rotterdam,                                | 99       | 62           |
| Stettin,                                  | 6        |              |
| New York,                                 | 3 dms.   |              |
| <b>Chrome Ore—</b>                        |          |              |
| Libau,                                    | 10 t.    |              |
| <b>Cottonseed Oil—</b>                    |          |              |
| Amsterdam,                                | 1,423 c. |              |
| Antwerp,                                  | 4,131    |              |
| Bremen,                                   | 466      |              |
| Copenhagen,                               | 200      |              |
| Hamburg,                                  | 2,632    |              |
| Rotterdam,                                | 865      |              |
| <b>Dye-stuffs (otherwise undescribed)</b> |          |              |
| Gothenburg,                               | 50 cks.  |              |
| Libau,                                    | 1 cs.    |              |
| Rotterdam,                                | 46       |              |
| Stettin,                                  | 60 bgs.  |              |
| <b>Glue—</b>                              |          |              |
| Ghent,                                    | 13 bls.  |              |
| New York,                                 | 132 cks. |              |
| <b>Linseed Oil—</b>                       |          |              |
| Antwerp,                                  | 62 c.    |              |
| Aalesund,                                 | 7        |              |
| Bombay,                                   | 743      |              |
| Bergen,                                   | 36       |              |
| Christiania,                              | 558      |              |
| Christiansund,                            | 70       |              |
| Drontheim,                                | 60       |              |
| Hamburg,                                  | 155      |              |
| Kurrachee,                                | 30       |              |
| Rotterdam,                                | 153      |              |
| Stavanger,                                | 7        |              |
| <b>Manure—</b>                            |          |              |
| Dunkirk,                                  | 50 t.    |              |
| <b>Painters' Colours—</b>                 |          |              |
| Amsterdam,                                | 11 cks.  |              |
| Antwerp,                                  | 64       | 4 cs. 2 pks. |
| Bombay,                                   | 50 dms.  |              |
| Bergen,                                   | 10       | 60 100       |
| Boston,                                   | 5        |              |
| Christiansund,                            | 10 dms.  | 48           |
| Copenhagen,                               | 2        | 12           |
| Christiania,                              | 10       | 116          |
| 44 dms.                                   |          |              |
| Christiansand,                            | 3        | 40           |
| Ghent,                                    | 3        |              |
| Hamburg,                                  | 281      | 178          |
| Hango,                                    | 2        |              |
| Kurrachee,                                | 3        | 3            |
| New York,                                 | 22       |              |
| Rouen,                                    | 22       |              |
| Rotterdam,                                | 3        | 1 1          |
| 6 dms.                                    |          |              |
| Stettin,                                  | 41 29    |              |

|                      |              |         |
|----------------------|--------------|---------|
| <b>Paraffin Wax—</b> |              |         |
| Reval,               | 105 bgs.     |         |
| <b>Pitch—</b>        |              |         |
| Antwerp,             | 216 t.       |         |
| Boston,              | 24 cks.      |         |
| Drontheim,           | 20 kgs.      |         |
| Dunkirk,             | 140          |         |
| <b>Soap—</b>         |              |         |
| Drontheim,           | 40 bxs.      | 10 bds. |
| <b>Starch—</b>       |              |         |
| Copenhagen,          | 110 cs.      |         |
| <b>Tar—</b>          |              |         |
| Amsterdam,           | 12 cks.      |         |
| Antwerp,             | 2            |         |
| Bergen,              | 3            |         |
| Copenhagen,          | 10           |         |
| Drontheim,           | 3            |         |
| Rotterdam,           | 9            |         |
| Stettin,             | 5            |         |
| <b>Treacle—</b>      |              |         |
| Drontheim,           | 25 brls.     |         |
| <b>Turpentine—</b>   |              |         |
| Rotterdam,           | 1 ck.        |         |
| Bombay,              | 175 dms.     |         |
| <b>Varnish—</b>      |              |         |
| Antwerp,             | 6 cks. 7 cs. |         |
| Bombay,              | 75 dms.      |         |
| Dunkirk,             | 2            |         |
| Gothenburg,          | 1            |         |
| Hamburg,             | 2            |         |
| Rotterdam,           | 1            |         |

**GLASGOW.**

Week ending March 12th.

|                                          |        |        |
|------------------------------------------|--------|--------|
| <b>Albumen—</b>                          |        |        |
| U.S.A.,                                  |        | £136   |
| <b>Ammonium Sulphate—</b>                |        |        |
| Genoa,                                   | 20 t.  | 11¼ c. |
| Torre-Del-Mar,                           | 10     |        |
| Valencia,                                | 181    | 12     |
| Venice,                                  | 32     | 8½     |
| <b>Bleaching Powder—</b>                 |        |        |
| Calcutta,                                |        | £270   |
| <b>Boracic Acid—</b>                     |        |        |
| Rotterdam,                               | 1 t.   | 2 c.   |
| <b>Carbolic Acid—</b>                    |        |        |
| Rotterdam,                               | 5 t.   | 14 c.  |
| <b>Chemicals (otherwise undescribed)</b> |        |        |
| Hamburg,                                 |        | £2     |
| <b>Coal Products—</b>                    |        |        |
| Alizarine                                |        |        |
| Pt. Lyttelton,                           |        | £130   |
| <b>Aniline Dye</b>                       |        |        |
| Calcutta,                                |        | £80    |
| <b>Creosote Oil</b>                      |        |        |
| U.S.A.,                                  |        | £15    |
| Danzig,                                  | 94 t.  | 40     |
| <b>Pitch</b>                             |        |        |
| Gothenburg,                              |        | £150   |
| Naples,                                  |        | 665    |
| Venice,                                  |        | 664    |
| Danzig,                                  | 55 t.  |        |
| Calcutta,                                |        | 28     |
| <b>Tar</b>                               |        |        |
| Rotterdam,                               | 15 c.  |        |
| Bombay,                                  |        | £24    |
| Danzig,                                  | 172 t. |        |
| Calcutta,                                |        | 95     |
| <b>Tar Oil</b>                           |        |        |
| Rotterdam,                               |        | £92    |
| <b>Coal Products (otherwise undes.)—</b> |        |        |
| Rotterdam,                               | 16 t.  |        |
| <b>Copperas—</b>                         |        |        |
| Calcutta,                                |        | £32    |
| <b>Dyestuffs (otherwise undes.)—</b>     |        |        |
| Oporto,                                  |        | £26    |
| <b>Extracts—</b>                         |        |        |
| Boston,                                  |        | £338   |
| Malaunay,                                |        | 68     |
| <b>Dried Blood—</b>                      |        |        |
| Ghent,                                   | 19 t.  | 9¼ c.  |
| Rouen,                                   | 9      | 19½    |
| <b>Farina—</b>                           |        |        |
| Rio de Janeiro,                          |        | £24    |
| <b>Gelatine—</b>                         |        |        |
| Canada,                                  |        | £73    |
| <b>Glue—</b>                             |        |        |
| Canada,                                  |        | £56    |
| <b>Iodine—</b>                           |        |        |
| Rotterdam,                               |        | £745   |
| <b>Linseed Oil—</b>                      |        |        |
| La Plata,                                | 2 t.   | 3¼ c.  |
| <b>Logwood—</b>                          |        |        |
| Gothenburg,                              |        | £105   |
| Oporto,                                  |        | 55     |
| <b>Magnesium Sulphate—</b>               |        |        |
| Christiania,                             | 2 t.   | 10 c.  |

|                              |       |           |
|------------------------------|-------|-----------|
| <b>Manure—</b>               |       |           |
| Valencia,                    | 51 t. | 17¼ c.    |
| <b>Nitric Acid—</b>          |       |           |
| Bombay,                      |       | £135      |
| <b>Paint—</b>                |       |           |
| Pt. Elizabeth,               |       | £73       |
| <b>Painters' Colours—</b>    |       |           |
| Chefoo,                      |       | £20       |
| Hong Kong,                   |       | 103       |
| Shanghai,                    |       | 75        |
| Bombay,                      |       | 304       |
| B. Ayres,                    |       | 55        |
| Calcutta,                    |       | 412       |
| Iquique,                     |       | 54        |
| <b>Paraffin Wax—</b>         |       |           |
| Christiania,                 |       | £40. 108. |
| Italy,                       |       | £41       |
| Genoa,                       |       | 732       |
| Leghorn,                     |       | 34        |
| Palermo,                     |       | 47        |
| Valencia,                    |       | 68        |
| Venice,                      |       | 93        |
| Barcelona,                   |       | 153       |
| <b>Potassium Bichromate—</b> |       |           |
| Antwerp,                     |       | £190      |
| Basle,                       |       | 198       |
| Brussels,                    |       | 50        |
| Genoa,                       |       | 98        |
| Verviers,                    |       | 201       |
| <b>Rosin Oil—</b>            |       |           |
| Antwerp,                     |       | £60       |
| <b>Soap—</b>                 |       |           |
| Jamaica,                     | 1 t.  | 5 c.      |
| E. London,                   | 2     | 10        |
| <b>Sodium Bichromate—</b>    |       |           |
| Brussels,                    | 4 t.  | 3 c.      |
| Genoa,                       | 22    | 2¼        |
| Bombay,                      | 1     |           |
| Lyons,                       | 7     | 11¼       |
| Paris,                       | 5     | 4¼        |
| Rheims,                      | 5     | 5½        |
| Rouen,                       | 15    | 12        |
| <b>Sodium Sulphate—</b>      |       |           |
| Calcutta,                    | 3 t.  | 10 c.     |
| St. John, N.B.,              | 7     | 10        |
| <b>Starch—</b>               |       |           |
| Rio de Janeiro,              |       | £113      |
| <b>Sulphur—</b>              |       |           |
| B. Ayres,                    |       | £21       |
| <b>Sulphuric Acid—</b>       |       |           |
| Rangoon,                     |       | £320      |
| Bombay,                      |       | 1,050     |
| <b>Tallow—</b>               |       |           |
| Rotterdam,                   | 5 t.  | 5 c.      |
| Oporto,                      | 1     | 1         |
| <b>Treacle—</b>              |       |           |
| Christiania,                 | 36 t. | 3½ c.     |
| Gothenburg,                  | 7     | 10¼       |
| Bergen,                      | 20    | 9½        |
| Drontheim,                   | 6     | 2         |
| Cape Town,                   | 3     | 12½       |
| <b>White Lead—</b>           |       |           |
| Johannesburg,                |       | £174      |

**TYNE.**

Week ending March 7th.

|                          |       |       |
|--------------------------|-------|-------|
| <b>Alkali—</b>           |       |       |
| Hamburg,                 | 5 t.  | 12 c. |
| Christiania,             | 1     | 2     |
| Antwerp,                 | 10    | 3     |
| Amsterdam,               | 34    | 19    |
| <b>Ammonia—</b>          |       |       |
| Gothenburg,              | 1 t.  |       |
| <b>Antimony—</b>         |       |       |
| Antwerp,                 | 1 t.  |       |
| Hamburg,                 | 3     | 10 c. |
| Rotterdam,               | 5     |       |
| Savona,                  | 2     |       |
| <b>Arsenic—</b>          |       |       |
| Copenhagen,              | 1 t.  | 1 c.  |
| <b>Asbestos—</b>         |       |       |
| Bergen,                  |       | 2 c.  |
| <b>Barium Binoxide—</b>  |       |       |
| Hamburg,                 | 1 t.  | 1 c.  |
| <b>Barytes—</b>          |       |       |
| Libau,                   | 10 t. |       |
| <b>Bleaching Powder—</b> |       |       |
| Antwerp,                 | 10 t. | 7 c.  |
| Hamburg,                 | 10    | 8     |
| Rotterdam,               | 13    | 17    |
| Christiania,             | 1     | 1     |
| Copenhagen,              | 9     | 2     |
| Aarhus,                  | 15    | 2     |
| Trondhjem,               | 10    | 2     |
| Gothenburg,              | 5     | 3     |
| Rostock,                 | 2     | 4     |
| Amsterdam,               | 10    | 13    |

|                                          |        |       |
|------------------------------------------|--------|-------|
| <b>Caustic Soda—</b>                     |        |       |
| New York,                                | 232 t. | 2 c.  |
| Antwerp,                                 | 24     | 14    |
| Hamburg,                                 | 9      | 13    |
| Christiania,                             | 3      | 18    |
| Gothenburg,                              | 60     | 1     |
| Amsterdam,                               | 6      | 9     |
| <b>Chemicals (otherwise undescribed)</b> |        |       |
| Aarhus,                                  |        | 12 c. |
| <b>Copperas—</b>                         |        |       |
| Aarhus,                                  | 3 t.   | 3 c.  |
| <b>Lamp Black—</b>                       |        |       |
| Rotterdam,                               |        | 17 c. |
| <b>Litharge—</b>                         |        |       |
| Hamburg,                                 |        | 16 c. |
| Christiania,                             |        | 6     |
| Rostock,                                 | 1 t.   | 2     |
| Amsterdam,                               |        | 11    |
| <b>Magnesia—</b>                         |        |       |
| Antwerp,                                 |        | 12 c. |
| Hamburg,                                 |        | 2     |
| Genoa,                                   | 2 t.   | 9     |
| <b>Manure—</b>                           |        |       |
| Savona,                                  | 100 t. | 1 c.  |
| Rostock,                                 |        | 14    |
| <b>Paint—</b>                            |        |       |
| Antwerp,                                 | 2 t.   | 10 c. |
| Hamburg,                                 | 3      | 16    |
| Christiania,                             |        | 9     |
| Bergen,                                  |        | 11    |
| <b>Painters' Colours—</b>                |        |       |
| Antwerp,                                 |        | 1 c.  |
| <b>Soda—</b>                             |        |       |
| Antwerp,                                 | 5 t.   | 2 c.  |
| Rotterdam,                               | 30     |       |
| Christiania,                             | 22     | 9     |
| Bergen,                                  | 5      | 7     |
| Kasberg,                                 | 32     | 6     |
| Amsterdam,                               | 34     | 19    |
| <b>Soda Ash—</b>                         |        |       |
| Christiania,                             | 5 t.   | 3 c.  |
| Pillau,                                  | 10     | 5     |
| <b>Sodium Sulphate—</b>                  |        |       |
| Antwerp,                                 |        | 13 c. |
| Gothenburg,                              | 50 t.  |       |
| <b>Sulphur—</b>                          |        |       |
| Antwerp,                                 | 4 t.   |       |
| Rotterdam,                               | 10     | 1 c.  |
| Gothenburg,                              | 75     |       |
| <b>White Lead—</b>                       |        |       |
| Christiania,                             | 1 t.   | 3 c.  |
| Copenhagen,                              | 1      | 4     |

**GOOLE.**

Week ending March 4th.

|                                          |          |       |
|------------------------------------------|----------|-------|
| <b>Chemicals (otherwise undescribed)</b> |          |       |
| Hamburg,                                 | 17 cks.  |       |
| <b>Coal Products (otherwise undes.)—</b> |          |       |
| Antwerp,                                 | 73 cks.  |       |
| Boulogne,                                | 1        |       |
| Ghent,                                   | 2        |       |
| Rotterdam,                               | 234      |       |
| <b>Colours—</b>                          |          |       |
| Amsterdam,                               | 2 cks.   |       |
| Boulogne,                                | 6        | 4 cs. |
| Ghent,                                   | 6        |       |
| <b>Dyestuffs (otherwise undescribed)</b> |          |       |
| Antwerp,                                 | 1 ck.    | 2 cs. |
| Hamburg,                                 | 7        |       |
| <b>Manure—</b>                           |          |       |
| Antwerp,                                 | 110 bgs. |       |
| Boulogne,                                | 11       |       |
| Dunkirk,                                 | 480      |       |
| <b>Pitch—</b>                            |          |       |
| Antwerp,                                 | 269 t.   |       |

**GRIMSBY.**

Week ending March 7th.

|                                          |          |       |
|------------------------------------------|----------|-------|
| <b>Chemicals (otherwise undescribed)</b> |          |       |
| Rotterdam,                               | 39 dms.  |       |
| <b>Coal Products (otherwise undes.)—</b> |          |       |
| Dieppe,                                  | 170 cks. | 2 cs. |
| <b>Colours—</b>                          |          |       |
| Antwerp,                                 |          | 1 cs. |
| Rotterdam,                               | 3 cks.   |       |
| <b>Dyestuffs (otherwise undescribed)</b> |          |       |
| Dieppe,                                  | 1 ck.    |       |
| <b>Manure—</b>                           |          |       |
| Dieppe,                                  | 266 bgs. |       |
| <b>Pitch—</b>                            |          |       |
| Antwerp,                                 | 50 t.    |       |
| <b>Soap—</b>                             |          |       |
| Dieppe,                                  | 6 cks.   |       |



WEDNESDAY, MARCH 18TH, 1896

The lowest available rate is by air freight, or in small parcels of shipment in U.K. The price in different localities may vary.

| Commodity                             | Unit          | Price   |
|---------------------------------------|---------------|---------|
| Lime, Acetate (brown) (ex ship)       | per ton       | 4 15    |
| (grey) (ex ship)                      | per ton       | 7 10    |
| Magnesium (ribbon and wire)           | per oz.       | 0 2     |
| Chloride (ex ship)                    | per ton       | 2 7     |
| Carbonate                             | per cwt.      | 1 17    |
| Hydrate                               | per ton.      | 17 0    |
| Sulphate (Epsom Salts)                | per ton       | 2 15    |
| Manganese, Sulphate                   | per cwt.      | 16 10   |
| Borate                                | per cwt.      | 2 15    |
| Ore, 70 %                             | per ton       | 3 10    |
| Methylated Spirit, 61° O.P.           | per gallon    | 0 1 9   |
| Naphtha (Wood), Solvent               | per gallon    | 0 3 0   |
| Miscible, 60° O.P.                    | per gallon    | 0 3 7   |
| <b>Oils:—</b>                         |               |         |
| Cotton-seed                           | per ton       | 17 10 0 |
| Linseed                               | per ton       | 20 5 0  |
| Petroleum, American                   | per gallon    | 0 0 7   |
| Stearine                              | per ton       | 24 0 0  |
| Phosphorus (yellow)                   | per lb.       | 0 2 2   |
| (red)                                 | per lb.       | 0 2 8   |
| Potassium (metal)                     | per oz.       | 0 3 7   |
| Bichromate                            | per lb.       | 0 0 4   |
| Carbonate, 90% (ex ship)              | per ton       | 17 5 0  |
| Chlorate                              | per lb.       | 0 0 4   |
| Cyanide, 98%                          | per lb.       | 0 1 2   |
| Hydrate (Caustic Potash) 90%          | per ton       | 24 10 0 |
| " (Caustic Potash) 75/80%             | per ton       | 20 10 0 |
| " (Caustic Potash) 70/75%             | per ton       | 19 10 0 |
| Nitrate (refined)                     | per cwt.      | 1 1 6   |
| Permanganate                          | per cwt.      | 3 7 6   |
| Prussiate Yellow                      | per lb.       | 0 0 4   |
| Sulphate, 90% (ex ship)               | per ton       | 9 15 0  |
| Muriate, 80% (do.)                    | per ton       | 8 10 0  |
| Silver (metal)                        | per oz.       | 0 2 7   |
| Nitrate                               | per oz.       | 0 2 0   |
| Sodium (metal)                        | per lb.       | 0 2 1   |
| Carb. (refined Soda-ash) 48%          | per ton       | 4 15 0  |
| " (Caustic Soda-ash) 48%              | per ton       | 4 5 0   |
| " (Carb. Soda-ash) 48%                | per ton       | 4 0 0   |
| " (Alkali) 58%                        | per ton       | 3 15 0  |
| " (Soda Crystals)                     | per ton       | 2 2 6   |
| Acetate (ex-ship)                     | per ton       | 14 10 0 |
| Arseniate, 45%                        | per ton       | 15 0 0  |
| Chlorate                              | per lb.       | 0 0 6   |
| Borate (Borax)                        | net, per ton. | 19 12 0 |
| Bichromate                            | per lb.       | 0 0 4   |
| Hydrate (77 % Caustic Soda) (f.o.b.)  | net pr. ton   | 9 7 6   |
| " (74 % Caustic Soda)                 | per ton       | 8 7 6   |
| " (70 % Caustic Soda)                 | per ton       | 7 7 6   |
| " (60 % Caustic Soda)                 | per ton       | 6 7 6   |
| " (60 % Caustic Soda, cream) (f.o.b.) | per ton       | 6 7 6   |
| Bicarbonate                           | per ton       | 6 10 0  |
| Hyposulphite                          | per ton       | 6 10 0  |
| Manganate, 30%                        | per ton       | 16 0 0  |
| Nitrate (95 % ex-ship Liverpool)      | per cwt.      | 0 7 10  |
| Nitrite, 98%                          | per ton       | 30 0 0  |
| Phosphate                             | per ton       | 13 5 0  |
| Silicate (glass)                      | per ton       | 4 10 0  |
| " (liquid, 100° Tw.)                  | per ton       | 3 10 0  |
| Stannate, 40%                         | per cwt.      | 3 2 9   |
| Sulphate (Salt-cake)                  | per ton.      | 1 5 0   |
| " (Glauber's Salts)                   | per ton.      | 1 10 0  |
| Sulphide                              | per ton       | 7 15 0  |
| Sulphite                              | per ton       | 5 5 0   |
| Strontium Hydrate, 100%               | per ton       | 8 10 0  |
| Sulphocyanide Ammonium, 95%           | per lb.       | 0 0 6   |
| Barium, 95%                           | per lb.       | 0 0 4   |
| Potassium                             | per lb.       | 0 0 7   |
| Sulphur (Flowers)                     | per ton.      | 6 15 0  |
| (Roll Brimstone)                      | per ton.      | 5 0 0   |
| Brimstone: Best Quality               | per ton.      | 3 12 6  |
| Superphosphate of Lime (26%)          | per ton.      | 2 7 6   |
| Tallow                                | per ton.      | 22 0 0  |
| Tin Crystals                          | per lb.       | 0 0 3   |
| English Ingots                        | per ton       | 64 10 0 |
| Zinc (Spelter)                        | per ton       | 15 5 0  |
| Chloride (solution, 100° Tw.)         | per ton       | 5 2 6   |



# THE CHEMICAL TRADE JOURNAL AND OIL, PAINT and COLOUR REVIEW.

Publishing Offices: 32, BLACKFRIARS STREET, MANCHESTER.

No. 462.

SATURDAY, MARCH 28, 1896.

Vol. XVIII.

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## Notices.

All communications for the *Chemical Trade Journal* should be addressed, and Cheques and Post Office Orders made payable to—

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Our Registered Telegraphic Address is—

**"Expert, Manchester."**

NATIONAL TELEPHONE 3060.

The Terms of Subscription, commencing at any date, to the *Chemical Trade Journal*,—payable in advance,—including postage to any part of the world, are as follows:—

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| Yearly (52 numbers) .....      | 12s. 6d. |
| Half-Yearly (26 numbers) ..... | 6s. 6d.  |
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Advertisements intended for insertion in the current week's issue should reach the office by **Thursday morning** at the latest.

## CURRENT TOPICS.

### THE BRINE PUMPING BILL.

THE discussion of this Bill has recently been advanced by the promoters and opposers before the Select Committee of the House of Lords.

The majority of the evidence was much the same as that given before the House of Commons Committee. The chief opponents were the Salt Union and Messrs. Bowman, Thompson, & Co. Limited. Mr. Balfour Browne stated the case for the Union, but no witnesses were examined.

On behalf of Messrs. Bowman, Thompson, & Co. Limited, however, three witnesses gave evidence. In his evidence for the promoters, Professor Boyd Dawkins gave it as his opinion that pumping operations at Northwich would affect Lostock Gralam. Cross-examined by Mr. Carver, he admitted, however, that he had not investigated the conditions of pumping on Messrs. Bowman, Thompson, & Co.'s land.

After the hearing of the evidence had been concluded, the Committee decided that the Bill should proceed, and on Monday last so reported to the House.

### MARGARINE PENALTIES.

The Food and Drugs Adulteration Committee seem to be getting to work in right earnest. The evidence so far has been largely introductory, so to speak, but is now veering round to the question of penalties.

Our estimate of the adequacy of the present penalties, as deterrents, need not be repeated here, as it has been confirmed and exemplified on many occasions in these columns. The evidence of Mr. Sumner not only supports our contentions, but even goes so far as to advocate the imprisonment of old offenders.

Such a recommendation may smack somewhat of excessively rigorous reform, but such measures are in vogue on the Continent, and truly the experience of the last five years shows that unless it be compulsory for the Bench to imprison after several convictions, it is almost impossible to ensure the severity of treatment that such cases of wilfully-persistent adulteration merit.

Much no doubt could be done by raising the fines in proportion to the number of convictions, but it is absolutely necessary in any change that the present maximum fine of £20. be made the minimum for a first conviction.

The substitution of margarine for butter is such a profitable business that even the maximum penalty of £20., if inflicted once a month, affords but a paltry punishment, and is one that can be almost courted with impunity.

To start at £20. as the lowest fine, however, would put another aspect on the matter, as though, according to our own logic, it would be a bagatelle in the first conviction, the knowledge that the second and third would have to be paid for at about the tune of £50. and £100., would, we feel con-



vinced, cause the vast majority of defaulters to carefully avoid Police Court proceedings altogether.

There is justice also in punishing by imprisonment the act of refusing to sell, without the option of a fine. Already the sale of a sample for analysis is often refused, because it is better to pay the resulting £10. fine and costs than to have the analysis placed on record.

At the same time the very act of refusal is of itself a *prima facie* conviction of fraud, for were it otherwise the analysis would only confirm the honesty of the vendor.

There is, however, one point we should like to see clearly established, and that is that the small retail vendor is fully protected against the ignominy of imprisonment, when the real offenders are wealthy but unscrupulous manufacturers.

It is the latter that must be threatened with imprisonment if they continue to supply margarine or mixtures as butter, but unless the retailers are fully protected by warranties or other means, they will assuredly be made the scapegoats.

#### TWO AND TWO MAKE FOUR.

The display of feeling over Mr. Quilter's Pure Beer Bill is not without its ludicrous side. Pure beer is most desirable, but it is an open question if the methods of the agriculturists will be thoroughly effectual. It is stated on one side that the worst material brewers have to deal with is English barley, and if restrictions are to be placed on the brewing trade, foreign grain will very soon not only partly but absolutely supplant home produce. This is, however, the brewers' statement. On the other hand, though the advocates of pure beer have a most laudable aim in view, their arguments do not always hold water. A very ardent advocate some time ago sent a letter to the Press containing a very lengthy list of "adulterants" used in the making of beer. At first sight the array was formidable, but on closer examination it appeared that, roughly speaking, fifty per cent. of the "adulterants" were calcium sulphate disguised under the various trade names of special water-hardening agents, while the other fifty per cent. were preparations of bisulphites. After this discovery the subsequent phillipics of this well meaning pure beer champion somehow fell flat, and were unconvincing.

The brewers are greatly up in arms, because they allege that the Bill would hamper their trade.

Following their previous policy, the Government should now promptly refuse to hear anything the brewing trade may have to say, on the ground that they are merely seeking their own good.

At the same time, all evidence that may tend to hamper the trade should be accepted with unlimited credulity, so that the importation of foreign beer may increase and multiply plentifully.

It will certainly never do for the Home Office to countenance anything that by any chance may benefit a home industry.

Though foreign beer with an undue proportion of *indicus coculus* may poison a few more people, the matter is of no more importance than the regular roasting to death of one subject a day throughout the year with American petroleum, when contrasted with the heinousness of countenancing the possibility of benefiting a home trade, or giving a just hearing to those who by establishing the magnitude of the danger to the public, might make it impossible for the Home Office to shut their eyes any longer. As far as the brewing interests are concerned, however, we think that if the Home Secretary turned a deaf ear to the prayers of the trade he would have to suffer the tortures of a phonograph advocating in metallic tones the rights of

brewers at his club and even in his bedchamber. Somehow we do not think it will be necessary for brewers to resort to such extreme measures to gain the attention of the Home Office. Truly the ways of Government Offices are mysterious.

#### NOTES ON ARTIFICIAL REFRIGERATION.

THE choice of a gas is not a matter of indifference. First, its critical temperature, that at which the liquid form is not possible, must be sufficiently high, so as not to be attained under the influence of the pressure exerted by the machine. Then, when identical volumes of gas of different natures are reduced by compression to other and smaller volumes, also the same for all, the energy expended, and consequently the pressures and the temperatures attained, will not be the same for the various gases, some of them being heated more highly than others. If they are brought back to their initial temperature with a view to reduce them to a liquid state, a larger quantity of heat must be abstracted from them than from the others; and besides, this quantity will be so much greater as their latent heat of evaporation is greater. By further evaporating they will extract from the surrounding bodies a corresponding quantity of heat, and will therefore constitute a much more intense source of cold.

In other words, to obtain the same quantity of ice, unequal quantities of gas of different nature must be compressed; and this amounts to saying that, for making 50 kilogs. of ice at a temperature of -3 degs. Cent. (26.6 degs. Fahr.) with water at +10 degs. Cent. (50 degs. Fahr.), there must be compressed the following volumes of the different substances:—

|                           | Cubic metres. | Proportion. |
|---------------------------|---------------|-------------|
| Sulphuric ether .....     | 150 .....     | 12.23       |
| Sulphurous anhydride .... | 15 .....      | 2.46        |
| Methylic ether .....      | 10 .....      | 1.52        |
| Ammonia .....             | 5.6 .....     | 1           |
| Carbonic anhydride .....  | 0.97 .....    | 0.174       |

The dimensions of the machines will therefore not be the same. If the volume of the cylinder used to compress ammonia be taken as unity, the various cylinders for the other substances must have the volumes added, at the right of the above table, under the head of "Proportion," from which the favourable position of ammonia will at once be seen.

There are, however, other points in favour of ammonia—its low price, its stability, and the ease with which it may be employed. Indeed, sulphuric and methylic ethers are very inflammable; and sulphurous anhydride bears the reproach of at last absorbing the humidity of the atmosphere, of forming sulphurous acid, and of attacking the machines. There was, however, one circumstance which appeared to render difficult the general use of ammonia machines. Gaseous ammonia, at a temperature equal to that of condensation water, only becomes liquid at a pressure much higher than that necessary for ether and sulphurous anhydride machines, so that it was necessary to make a stuffing-box that should render leakage impossible.

The above figures show that, theoretically, carbonic anhydride machines occupy a still more favourable position than those working with ammonia; but the pressures they require are enormous, attaining 60 to 80 atmospheres. Besides, in addition to the difficulty of special construction, their use sometimes constitutes a permanent source of danger; and, moreover, it is very difficult to detect an escape, as this gas has no smell. Sometimes a mixture of sulphurous and carbonic anhydrides is employed, but comparative trials have pronounced decidedly in favour of ammonia.

**Expansion Machines.**—In this variety a permanent gas, air for instance, is compressed. The work of compression is transformed into heat, and the gas is brought back to its original temperature by cooling down with a stream of water. When the pressure exerted upon it is removed, the gas abstracts from the surrounding bodies exactly the same quantity of heat as that which it has received through the work of compression, and which was afterwards abstracted by the water. It follows that these machines constitute a much less effective source of cold than those of the preceding category, which utilise the relatively high latent heat of vaporisation. To make 50 kilogs. of ice at -3 degs. Cent. with water at +10 degs. Cent., no less than 740 cubic metres of air must be compressed, while 5.6 cubic metres of ammonia are sufficient for the same purpose. If, on the other hand, very low temperatures be required, air-compressing machines better answer the purpose, because, even at a low pressure, the reduction of temperature is considerable.



## The Patent List.

*This list is compiled from Official sources in the Manchester Laboratory, under the immediate supervision of J. Davis and Alfred R. Davis, who report professionally on the value of Chemical Patents.*

### NOTIFICATIONS FOR ENGLISH LETTERS PATENT.

**Composition of Metals.** S. O. Cowper Coles. 5,253. March 9.  
**Apparatus for Manufacture of Formic Aldehyde.** W. Gray. March 9.  
**Means in Treating Low Grade Crude Iron by Bessemer or Gas Process.** L. Pszczolka. 5,358. March 10.  
**Means for Utilizing and Disinfecting Sewage.** P. O'Dowd. 5,381. March 10.  
**Drying Apparatus.** S. M. Lillie. 5,431. March 10.  
**Nitrocellulose Compounds.** O. Nagel. 5,432. March 10.  
**Nitrogenous and other Substances.** J. S. Wallace and J. Evans. 5,495. March 11.  
**Treatment of Carbon in Electro-chemical and other Electro-Processes.** A. Coehn. 5,584. March 12.  
**Electric Process and Apparatus.** A. E. Peyrussion. 5,616. March 12.  
**Treatment and Apparatus therefor.** J. T. Wood and J. A. Brodie. March 13.  
**Means for the Waste Products from Paper Mills.** J. Bradley. 5,665. March 13.  
**Metals by Electrolysis.** A. S. Elnore. 5,673. March 13.  
**Means.** J. N. Spence. 5,705. March 13.

### ABSTRACTS OF LATEST COMPLETE SPECIFICATIONS.

*Abstracts are specially prepared for the Chemical Trade Journal. All RIGHTS of publication are RESERVED. This is the earliest abstracts of Chemical and allied patents accessible to the public.*

**Means in or Relating to Apparatus for Removing Pitch from Barrels, or the like.** A. J. Boulton, 323, High Holborn, London, E.C. Communicated by C. F. L. Frohberg, Rosswein, Saxony. Eng. Pat. 1,412. 20th, 1895.

The use of fire gases for the removal of pitch from barrels is attended with danger from fire or explosion, and, besides, is a decided nuisance in the neighbourhood. Superheated steam lineary way overcomes the former difficulty, but the trouble and expense remains. The following process aims at obviating both evils:—The superheated steam is introduced by a pipe and a nozzle through the tap hole. The cask is supported on a stand or over a pit, with the bung hole looking downwards. Steam pitch runs out, and is caught in a collecting vessel beneath, steam and vapours are exhausted by a blast-pipe arranged to the closed support or pit. In this way the removal of pitch is effectively and conveniently achieved, while the escaping steam, by contact with the pipe conveying the superheated steam. There are three drawings, which should be consulted for mechanical details of the plant employed.

**Means for Separating Oleaginous Matter from a Solvent.** J. F. Taylor, Whitehall-street, Atlanta, Ga., U.S.A., and A. Riccio, 87, Luckie, Atlanta, Ga. Eng. Pat. 23,159. December 31st, 1895.

A tight vessel connected to a vacuum pump is surrounded by a water jacket, and both are entirely enclosed in a water jacket. The inlet to the vacuum pump is also surrounded with a water jacket, and is connected by pipes to the big water jacket. The vessel when charged with the mixture of oil and solvent (such as naphtha) is exhausted. The naphtha vapour escapes, and is passed by into the surrounding coil, where it is completely condensed. The water of the evaporating and compressing processes cools and water in the big jacket and in the vacuum pipe jacket respectively. The water thus circulates from the one to the other, keeping the naphtha and effecting the complete condensation of the naphtha. The whole of the latter is extracted the oil is run off by a cock at the bottom of the inner vessel. There is one sectional drawing showing the disposition of the supply pipes, and the exhausting and water pipes.

**Improved Process for Making Tormentil Soap by the Cold Process.** Thompson, 31, High Holborn (communicated by J. K. Okie, Berlin, Germany). Eng. Pat. 8,814. May 3rd, 1895.

A soda lye of 40° Bé is run, in a thin stream, into coconut oil at 38°C, in the proportion of 70 parts by weight of lye to 100 parts of oil, the whole being vigorously stirred. The necessary filling is made up, and a perfume made of extract and tincture of tormentil, sandalwood oils, oil of fennel, and oil of violets. The

whole is run into moulds and allowed to stand for about 20 hours, when the saponification is complete. The soap is then removed and allowed to set for half a day, when it can be cut up and pressed into cakes. The addition of colouring matter is not necessary, as the extract of tormentil imparts a bluish brown colour to the soap.

**Improvements in Scouring and Degreasing Wool.** W. G. Heys, 70, Market-street, Manchester (communicated by G. Malard, 19, Rue Cambon, Paris). Eng. Pat. 23,832. December 13th, 1895.

The wool is fed on to a travelling apron or belt which passes above a series of vats containing the cleansing liquid. The latter is pumped up into sprinklers placed above the belt, and so falls on to the wool, and into a device which either returns it to its own tank or into the next. The wool is first treated with liquid rich in wool fat, and finally with pure solvent. The transference of the liquid from tank to tank in the opposite direction to that in which the wool is travelling is accomplished automatically. The invention is essentially a mechanical one, and the six drawings that accompany the specification must be consulted for further particulars.

**Improvement in the Manufacture of Slag Cements.** S. Jørgensen, Strandvej, 14, Copenhagen. Eng. Pat. 9,210. May 9th, 1895.

The chief drawback to cements of this class is the time they take in setting. To overcome this the inventor adds a certain percentage of a specially-prepared cement to the usual mixture of slag and hydrated lime. Thus, 90% of slag and lime with 10% of this "addition" mixture sets in 11 hours, and has a tensile strength of 167 in 7 days. A mixture of 70% slag and lime with 30% of the "addition" mixture sets in 1 hour, and has a strength of 222 in 7 days. The "addition" mixture is made by preparing ordinary slag cement, adding enough water to make it set, which it is allowed to do in a thin, even layer. This layer is then lightly roasted in a kiln, and ground to a very fine powder, which is used for adding to ordinary cements.

## MUNICIPALITIES AND WATER-GAS.

**THE** Edinburgh Gas Commissioners have resolved to accept an estimate for the installation of the plant necessary for the manufacture of carburetted water-gas. This step was taken after consideration of an elaborate report on the question of the dangers and the illuminating and heating power of water-gas, by Professor Crum Brown, Professor of Chemistry at Edinburgh University. It is not intended at first to use carburetted water-gas unmixed, but to employ it, combined with ordinary coal-gas, in the proportion of one to two.

The Birmingham Corporation have also decided to commence the manufacture of water-gas to supplement their present production of coal-gas, which is scarcely adequate to the requirements of the city. It is not proposed to adopt water-gas in a greater proportion than one-third of the total gas production. The plant about to be put down will diminish the amount of coal required to the extent of 8,000 tons per annum, and ultimately to 165,000 tons. The plant to be laid down is of the "Lowe" type, embodying the improvements of Merrifield, Westcott, and Pearson. There are to be two complete sets of generating and carburetting apparatus, with ample condensing, washing, and scrubbing power, also "blowers," exhausters, engines and pumps, oil heaters, &c., each item being in duplicate, and each equal to the working of both sets of generators. At each works the capacity of the plant is to be about two million cubic feet of gas per day. The capital outlay upon the two installations, including buildings and oil tanks now ordered, will be about £60,000, as compared with about £130,000 which would be required upon the most economical lines for coal-gas plant of a corresponding capacity.

**SOUTH AFRICAN SALTPETRE.**—The properties of the South African Saltpetre Fields Co., Ltd., are now in full operation. The first 100 tons will leave in a fortnight. Another rich deposit has been discovered on the company's property.

**CYANIDE PROCESS IN AMERICA.**—The Gold and Silver Extraction Company of America, Limited, has just succeeded in gaining an important legal decision in America in favour of the validity of the MacArthur-Forrest process, and a substantial sum has been recovered for infringement of the patent. It is said that the directors regard this decision with much satisfaction, which is natural, and that they "consider that it is likely to finally settle the question of the validity of the American patents of the MacArthur-Forrest process." It is difficult to see why the word "likely" is used unless we are to assume either that the action was not fought out, or that the decision might possibly be upset on appeal.



## Parliamentary Jottings.

### HORSELESS CARRIAGES.

In the House of Lords on Monday,

Lord Harris, in presenting a Bill to amend the law with respect to locomotives on highways, said the matter was one in which a good deal of interest had been taken during the past year. The method of the Bill was to exempt light locomotives from certain statutory provisions, and then to impose restrictions as regarded weight and traffic. It also reserved certain powers to local authorities and to the Local Government Board. The Bill further contained regulations as to the use and storage of petroleum and other inflammable materials used as fuel. He did not propose to make any further remarks until the second reading. The matter was one in which many of their lordships took a great interest, and it was possible when the measure came on for second reading they might be able to advise him to his advantage.

Lord Cliden asked whether the Bill included electricity as a motive power.

Lord Harris replied in the affirmative.

The Bill was then read a first time.

### THE BRINE PUMPING PROVISIONAL ORDER BILL.

The Brine Pumping (Compensation for Subsidence) Provisional Order Bill passed through Committee, and was reported to the House.

## CRITICISM OF THE PROPOSED LAMP LEGISLATION.

A n able and interesting criticism of Mr. Alfred Spencer's proposals for the regulation of the mineral oil lamp trade, recently appeared in the *Birmingham Post*, the critic being Mr. Edward J. Shaw, president of the Walsall Chamber of Commerce. The article in its entirety is too lengthy to be reproduced in our columns, but the following abstracts contain the pith of Mr. Shaw's arguments:—The legislative measures proposed are to be found in the transactions of the Select Committee held on the 26th and 27th of July, 1894. Mr. Alfred Spencer, of the Public Control Department of the London County Council, appeared as a witness. He advocated "a bill to prohibit the sale of lamps that are not of a safe construction;" he proposed that "the Secretary of State should be empowered from time to time to define what lamps are of safe construction;" that "inspectors should be appointed with power of seizure of dangerous lamps;" and that "the Home Secretary should make it a primary condition that all lamp reservoirs should be of metal." In respect to new lamps Mr. Spencer thought each inventor should "submit his invention to the Home Secretary, who would examine it;" or "the Secretary of State would issue an order which would cover a new invention which he believed to be safe." The chairman of the Committee, Mr. Mundella, asked Mr. Spencer "for any suggestion as to what ought to be done by legislation to secure the safety of lamps." His reply reads: "I should like to have in a clause which I suggest might be embodied in a petroleum bill or any other bill: The Secretary of State may from time to time by order make, and, when made, rescind, and alter specifications of lamps or other appliances intended to be used for burning mineral oil for purposes of illumination, heating, and cooking." Mr. Spencer then included a clause making it unlawful for any person to keep, expose, or sell any lamp not made to the Secretary of State's specifications, and ended by providing the usual penalties. Serious comment on these recommendations is all but impossible; they would excite only amazement were they not dignified by association with a Select Committee, for more impracticable schemes could scarcely be propounded. Suppose we consider, as an example, the one clause giving to the Secretary of State power "to order, to make, and, when made, rescind and alter specifications of lamps," we see, should it become law, that the stock, tools, and machinery of lamp manufacturers would cease to have any stable value. Employers together with employed would be paralysed by the insecurity induced by such an Act. Factors would cease to place orders in advance, not knowing what might happen, and manufacturers would be afraid to buy stocks of material for the same reason. Export demands for lamps and stoves would soon end, and the home trade rapidly become one for capital and labour to carefully avoid. It appears as if Mr. Spencer's suggestions all spring from the belief he expressed, when answering a question of Mr. Mundella's, he said: "Lamp accidents invariably happen because the lamp is made either of improper materials or improperly constructed." Now, as a lamp and glass manufacturer, constantly in touch with retailers throughout the country, I say, emphatically, that accidents do not invariably happen because lamps are defective; they are attributable to a variety of causes, of which this is the least.

A careful collection of the reports of accidents was made by Mr. Shaw through a Press-cutting agency. Concerning these he speaks as

follows:—The reports of accidents furnished me amount to 104. Of these no less than seventeen are avowedly due to assaults or to drunkenness, twenty-five to putting oil in lamps while alight, dropping lamps on the fire, children left with lamps, &c.—in all forty-two so-called "accidents," severe and otherwise, not attributable with any show of reason to the lamps themselves. There now remain sixty-two casualties, which may be classed as follows: Thirty-one described as explosions, twenty cases of knocking over tables, upsetting and stumbling over lamps; and eleven through carrying lamps up and down stairs. I may here observe that the details, as generally given, are meagre, possibly inexact, and the oil used was probably of the lowest grade. In considering what are termed explosions, there is no evidence that these are rightly designated. Explosions are extremely rare. During a long period only three or four have come under my notice, and these were with brass reservoirs filled with cheap oil.

The more such casualties are investigated the more surely will it be seen that about them there is no sensation, no fiery danger beyond control, but only such commonplaces as insobriety, inflammable oil, and unaccountable folly. Whether the reservoirs are of glass or brass, whether burners have short or long wick-tubes, straight or bent, patent or otherwise, these things make little or no difference when confronted with dirt, neglect, and indifference—enemies before which elaborate statutes and assiduous inspectors are equally helpless. [But not safe oil.—ED., C. T. J.]

I now come to the safety, or otherwise, of glass reservoirs, which Mr. Spencer would indiscriminately abolish and replace with metal. Personally, I am in favour of glass, and I use glass, although I make brass reservoirs for others to use. There is, however, glass and glass, and, while I prefer glass when of a proper strength both because of its safety and convenience, I strongly condemn thin glass reservoirs, which break with a slight concussion or fall, and I equally condemn thin metal founts, the seams of which melt when the burner takes fire. Heavy glass reservoirs are in every-day use, and are safe and substantial. I cannot call to mind a single accident in which such reservoirs have been concerned. Their advantages are obvious; they do not cast a shadow like a metal fount, there is no danger of over-filling, the condition of the wick can be always seen, and the oil is kept cool. From a report of a meeting of the Salisbury Guardians, held in December, I take this passage:—"The chairman said that the new small metal hand lamps, which were the cause of so much mischief (fires), had been purchased with the approval of the Poor Law Board inspector, and superseded a set of glass lamps formerly in use, with which no mishap had occurred." I am not opposed to metal founts. Much may be said in their favour, but certainly very far from sufficient to make their exclusive use wise or desirable.

A large portion of the evidence given before the Select Committee relates to what is called the "flash-point" of petroleum, or the temperature at which mineral oils give off an explosive vapour. I am no expert, and this is a question beset with difficulties, for apart from the diverse opinions of professed authorities there is to be considered the powerful influence of the American and Russian Trusts, and the oil trade rivalries as a whole. Amid these forces the lamp manufacturer stands, often as the scapegoat, but animated by a hope that his industry may not be sacrificed to the prosperity of the oil producer.

## BEET SUGAR AND MARGARINE IN BELGIUM.

I n proportion to its population Belgium produces more beetroot sugar than any other European country. In 1893 it possessed an average of one beet-sugar factory for every 51,750 inhabitants, whereas in Germany the proportion was one to every 125,000 inhabitants. The duty on sugar is calculated according to the density and volume of beetroot juice used in its manufacture. But the quantity of sugar extracted over and above the appraisement is unknown, and, as it is certain that the refineries greatly exceed the appraisement, they thus realise a considerable bonus above the internal revenue charge. The product of the refineries is generally a fine sugar of a light brown shade. They also made granulated white sugar for exportation as well as for home consumption, and the export trade is an increasing one. With regard to butter substitutes, it is provided that any person owning a factory for the manufacture of margarine or other artificial butters, or vessels or utensils forming a complete appliance serving to manufacture margarine or other artificial butters, shall make a declaration at the office of the receiver of excise taxes. Owners of manufactories of oleomargarine or melters of suets have to submit to the same formality. All such owners and manufacturers must furnish the agents with means of ascertaining the quantity of raw materials utilised and of product obtained, and must permit them to take the necessary samples; they are also obliged to prove the origin of the raw material. All manufacture of margarine or artificial butter made without declaration is punishable by a fine of £200., and severer penalties are provided for other infractions of the law.



## THE MAGNESITE DEPOSITS OF EUBŒA.

Following information concerning the now well-known Eubœan magnesite deposits in Greece has been communicated from the Foreign Office by Mr. Ernest B. Maxse:—

It has been known for some time that there are large deposits of magnesite ore in Eubœa and in other parts of Greece, as, for instance, in the Peloponnese. The "Société des Travaux Publics et Communaux" has undertaken the working of these deposits and the manufacture of bricks in Eubœa, and to all appearance a new and valuable trade for Greece has been called into existence.

The company is practically the only producer or exporter of stone, and maker of bricks. It owns a number of mines or lodes outcropping high up in the hills some four miles from Krimasi, a small place on the east coast of Eubœa and two miles from Limne, on the west side. At Krimasi vessels lie close in afloat, but the exposed to heavy seas, and affords bad anchorage in November and December. At Limne there is good shelter and nearly always water and excellent anchorage.

Magnesite ore (white stone) is shipped to England and America in sacks, and is sent either crude or calcined. It is also used in the resin in wool-pulp manufacture, and also, I believe, in glass. Apart, however, from these uses I think that by far the most promising field of operation and the most unique is that of using the stone after calcination to 1,600 degrees of heat, and forming it into bricks by machinery, which are then subjected to four days of continuous heat up to 2,150 degrees. This heat is obtained by the combustion of gas obtained from lignite (also a product of the country) by means of Siemens' patent apparatus. These bricks cost 10s. per ton, f.o.b., packed in crates, or about 6d. a piece. A cement to lay them with is made and sold at the same price. Bricks will stand a heat of 2,150 degrees, whereas ordinary fire-bricks which furnaces are built will not stand more than 1,800 degrees at the most. By using these magnesia fire-bricks a greater amount of fuel can be employed and a much more enduring furnace built. Bricks just made with hand-pressed bricks promise that these will be used for backing, or even alone (but, not being so hard, not so advantageous). As they weigh 20 per cent. less they will cost 20 per cent. less than the machine-made ones.

The principal lode worked near Krimasi has been proved to be of 420 metres in length and 20 to 30 metres in thickness (tally). It has been worked in two levels from the top, say, 100 feet, and it probably extends right down through the hill with a tendency to widen out as it goes down. It dips at an angle of about 77 degrees. The other lodes in the immediate neighbourhood, which have been opened up some 50 feet at the outcrop for examination, are similar in appearance.

The lode gives a general average of about 88 per cent. of carbonate of magnesia, one-third of it approximately being inferior. This is ascertained, and the company sells either by degree of analysis or by guarantee. The company only guarantee 95 per cent. of pure magnesia, though the analysis frequently gives 97.80 per cent. The stone is very hard and has to be broken out with dynamite. This magnesite is manufactured near Athens.

Following is the analysis of good quality of stone, such as exhibited at the Chicago Exhibition:—

|                         | Per cent. |
|-------------------------|-----------|
| Silica .....            | 0.45      |
| Oxide of iron .....     | 0.25      |
| Alumina .....           | 1.10      |
| Carbonate of lime ..... | 1.40      |
| „ „ magnesia .....      | 97.80     |
|                         | 100.00    |

In inferior grades the principal increase is in silica, say, to 5 to 7 per cent. This is occurring in the cleavage veins or lines.

P. Négris is the managing director of this company. He is also managing director of one of the large Laurium silver-lead mining companies.

The local manager at Krimasi is Mr. G. Maudias, who superintends the mining, sorting, calcining, and brick-making operations.

A well-engineered and constructed carriage road runs from Limne to Krimasi, near the Krimasi deposits, and on to Achmet Aga, where coal resides, an Englishman owning extensive property in the district.

The surrounding scenery here is lovely—pine-clad mountains to a height of 4,500 feet, and fertile plains at their base cultivated with a large variety of large-grained bearded-wheat.

Limne the mail steamer from and to Laurium calls at least every day both ways. The run takes some 12 hours, including stop at Kalkis, where the steamer has to await the turn of the tide, if it is high, before she can pass through the narrow passage here between Eubœa and the mainland. This channel is not more than 85 fathoms deep, and is in progress of being enlarged. A branch line of rail-

way to the point of the mainland opposite Kalkis is contemplated. This is a portion of the Pireus-Larissa Railway as originally planned. Kalkis (otherwise Chalkis) is the seat of the Nomarch (Préfet) of Eubœa. The telegraph wire runs through Limne to Mautudi, Krimasi, and Achmet Aga, and is carelessly constructed, the line crossing the road at several places so low as to require avoidance by carriages or even foot passengers.

The crude magnesite stone is shipped in large lumps of dazzling whiteness, and as a considerable time elapses between mining and shipping, the 4 to 4.5 per cent. of moisture in it disappears before weighing for shipment, so that practically buyers are said to incur no loss in weight.

A narrow gauge tram-line connects the mines with the brickworks at the foot of the hills, and thence runs some 4 kiloms. to the Krimasi anchorage. I may remark that, owing to the intense heat employed in this brickmaking, the chimney gives out absolutely no smoke.

I regret to report that young children of both sexes are employed in this industry for far too many hours—practically the whole working-day. They are used for carrying bricks and stone and in chipping off the visibly defective portions off the lumps of ore.

## THE ELECTROLYTIC ESTIMATION OF MERCURY.

By EDGAR F. SMITH AND DANIEL L. WALLACE.

THE precipitation of this metal from a cyanide solution has given quantitative results, which render the electrolytic procedure decidedly more advantageous to the analyst than the usual gravimetric course. However, conditions sometimes occur when even the preceding rapid method is made time-consuming. Thus in the working with mercury sulphide it would be necessary to first dissolve the substance in acids and remove the excess of the latter before advancing to the electrolytic decomposition of the resulting salt. Conscious of this fact and that mercury sulphide, as cinnabar, is a natural product, which is quite often offered for analysis, we took occasion to review the method first proposed by Smith, and subsequently confirmed by Vortmann, viz., the electrolytic deposition of mercury from its solution in an alkaline sulphide. The chief point to be ascertained was whether the time factor could be reduced. This had been accomplished with the cyanide solution by simply applying a gentle heat, thereby precipitating two-tenths gram of metal in about two hours. Another point which we wished to definitely establish was the exact current density for a given electrode surface. To this end several determinations were made, using a mercuric chloride solution of known mercury content:—

| Mercury present as chloride. gram. | Mercury found. gram. | N.D. of current in amperes for 100 sq. cm. surface. | Dilution of solution. cc. | Time. hrs. | Temp. °C. |
|------------------------------------|----------------------|-----------------------------------------------------|---------------------------|------------|-----------|
| 0.1913                             | 0.1917               | 0.13                                                | 125                       | 3          | 65°       |
| "                                  | 0.1916               | "                                                   | "                         | "          | "         |
| "                                  | 0.1908               | "                                                   | "                         | "          | "         |

In each case twenty cc. of sodium sulphide of specific gravity 1.22 were present.

These results indicate that mercury can be determined as rapidly and as accurately in this way as when working with a cyanide solution. By means of the method described in Fresenius' Quantitative Analysis, Am. Ed., p. 306, the following results were obtained:—

- 0.9590 gram of mineral gave 0.8194 gram of metal, or 85.44 per cent.
- 0.8586 gram of mineral gave 0.7325 gram of mercury, or 85.31 per cent.

Portions of the same mineral were weighed out in platinum dishes, and after solution in twenty to twenty-five cc. of sodium sulphide of specific gravity previously mentioned, were diluted with water to 125 cc. and electrolysed at a temperature of 70°, with a current of N.D. 100 = 0.12 ampere. The period of time allowed for the precipitations never exceeded three hours. The results were:—

|         | Cinnabar. gram. | Mercury. gram. | Percentage. |
|---------|-----------------|----------------|-------------|
| 1. .... | 0.2167          | 0.1850         | 85.37       |
| 2. .... | 0.2074          | 0.1769         | 85.29       |
| 3. .... | 0.2432          | 0.2077         | 85.40       |

We would observe that during the electrolytic decomposition the platinum dishes should be carefully covered to prevent evaporation, thereby exposing a rim of metal, which, if not in part volatilised, would yet be changed to mercury sulphide. The latter is indicated by a dark-coloured film. With a little attention there should be no question as to the final outcome of any determination made in this way. We regard the method as entirely satisfactory. The short time required for a determination, as outlined above, will recommend it in our judgment to analysts generally.



## THE LIFE WORK OF LIEBIG.\*

BY A. HOWARD.

*Introduction.*—Before commencing this paper I propose to say a few words about the way in which I intend to deal with the work of Liebig. The wide range of subjects over which his work extends makes it desirable to subdivide this brief account of his labours. Firstly, I shall say a few words upon his early life and training. Afterwards I shall give a short account of his work in connection with chemistry, fermentation, agriculture, and physiology. Lastly, I hope to say a few words about Liebig's method of teaching and his influence on the progress of science.

*Early Life and Training, &c.*—Justus Liebig was born on May 12th, 1803, at Darmstadt, where his father dealt in colours.

As a schoolboy Liebig was not a success from the pedagogic point of view. His bent of mind was so distinctly that of the experimenter that, as he tells us, his position at school was very deplorable. Like many other lads of this type, he had no ear memory, and could retain little or nothing of what he learned through the sense of hearing, with the result that he found himself in as uncomfortable a position as a boy could possibly occupy.

Owing to his inclination for chemistry, he was taken by his father to an apothecary at Heppenheim. Here he conducted private experiments in his attic, where before long explosions took place. At the end of a few months the alarmed apothecary was so sorry with his bargain that he sent the lad home again to his father.

Though Liebig had not mastered the lessons of the gymnasium, he had gained a knowledge of most of the processes carried on in his neighbourhood. He had watched the soap boiler, and had made soap on his own account. "In the workshop of the tanner and dyer, the smith and brassfounder, he was at home, and ready to do any hand's turn." Left to himself, he had gained extensive stores of information, and a deep-seated desire for more, and at the age of 16, by persistent importunity, he induced his father to permit him to go to the University of Bonn, whence he afterwards followed his professor, Kastner, to Erlangen. Here, in 1822, at the age of 19, Liebig took his degree of Ph.D., and at the same time published his first paper—an attempt to determine the composition of fulminating mercury.

At this time, Davy in England, Berzelius in Sweden, Gay-Lussac, Dulong, and Arago in France, were opening up new fields of research. These found no soil in Germany, where, as Liebig says, "it was then a wretched time for chemistry." At most of the German universities there was no special chair for chemistry—it was usually handed over to the professor of medicine, who taught it along with his medical subjects. Liebig soon found that he was not in the way to become a chemist at Erlangen, or anywhere else in Germany. His paper on fulminating mercury attracted the attention of the Grand Duke of Hesse-Darmstadt, who furnished him with the means of prosecuting his studies abroad. Then, most of the younger German chemists betook themselves to Stockholm, to sit at the feet of Berzelius. Paris, however, offered Liebig greater inducements. To give an idea of the state of chemistry at this time (1822), I might say in passing that Paris did not then boast of a single public laboratory. In 1823 he met Humboldt (the traveller), who introduced him to Gay-Lussac, in whose laboratory Liebig brought his analyses of the fulminates to a conclusion, and was rewarded by the discovery of *isomerism*.

Speaking of the French lectures, Liebig says:—"What impressed me most in the French lectures was their intrinsic truth, and the careful avoidance of all pretence in the explanations. It was the most complete contrast to the German lectures, in which the whole scientific teaching had lost its solid construction through the preponderance of the deductive method."

It was in Gay-Lussac's laboratory that Liebig, conscious of what he owed to the guidance and friendship of his master, conceived the idea of founding in Germany a school where he should be to his younger fellow workers that which Gay-Lussac had been to himself. A glorious dream gloriously fulfilled!

On Humboldt's recommendation Liebig was appointed in 1824 extraordinary professor of chemistry at Giessen—the university of his country, and the scene of the great labours and triumphs of his life. Two years later he was made ordinary professor. In 1852 he was called to Munich, where he died on April 18th, 1873.

Liebig was essentially a pioneer in science. In the course of his life he took the lead in no less than four great departures:—

1. In organic chemistry.
- 2 and 3. In the applications of chemistry to agriculture and to physiology; and
4. As a teacher.

Among the many distinctions he received may be mentioned the Copley medal of the Royal Society of London.

*Chemical Work:* (a) *Organic Analysis.*—A pioneer in science, like a traveller, must not set out till he is fully equipped. It was useless

for Liebig or anyone else to attempt to explore the depths of organic chemistry before a method for the analysis of organic substances was at his command. This Liebig knew full well, and accordingly we find that his leisure during his first years at Giessen was devoted to contriving such a method.

Lavoisier had attempted to analyse organic compounds, but without success. It was not until Liebig attempted to solve the problem that success was really attained. His method, like that of Lavoisier, consists in completely oxidising the substance under experiment and collecting and weighing the water and carbon dioxide formed. It remains in use almost unchanged to this day; it has served for the analysis of countless numbers of organic substances, and has thus formed the very foundation on which the whole vast structure of modern organic chemistry is based. It may be said to be one of Liebig's greatest gifts to science. Modifications for the process that were suitable for bodies containing *nitrogen*, *sulphur*, and *chlorine* were soon introduced, and thus the fundamental difficulty which had retarded the progress of organic chemistry for nearly fifty years was removed.

*Liebig and Wöhler.*—It would be impossible to tell the story of Liebig and his work without referring to his joint labours with Wöhler. They were guided by similar scientific aims, and were at the same time close personal friends. The portrait of the one is incomplete unless supplemented by the characteristic features of the other. The fruit of their common labour is among the richest in the whole of chemistry.

Wöhler was born near Frankfort on the 31st July, 1800. After taking his degree in 1823 he determined to place himself under the direction of Berzelius, at Stockholm, who was then at the summit of his fame.

After his return to Germany he accepted a post at Berlin, where he isolated aluminium, and accomplished the transformation of ammonium cyanate into urea. During these years he met Liebig. While in Gay-Lussac's Laboratory, in Paris, Liebig examined the fulminates, and satisfied himself as to the composition of fulminic acid. At almost the same time Wöhler was occupied with another and very dissimilar substance—cyanic acid—in the laboratory of Berzelius. Liebig was surprised to find that his results in the case of fulminic acid coincided with the analyses of cyanic acid made and published by Wöhler somewhat earlier. Cyanic acid and fulminic acid were so obviously different that no one could confuse them. Such a result therefore seemed almost absurdly impossible. How could the same elements combine in the same proportions to form dissimilar compounds? It was contrary to the fundamental principles of chemistry. Confident that his own results were correct, Liebig repeated Wöhler's work. But this was correct, too. These two compounds, so different from each other, were indeed identical in their composition. Gay-Lussac accepted the results, and pointed out that the new facts might be accounted for by assuming a difference in the manner in which the constituent elements are combined in the two substances. Before long it became impossible to doubt the existence of the phenomenon of *isomerism* (as it was called by Berzelius), which was first recognised through the work of these two—Liebig and Wöhler. On the very threshold of their careers these two men had made a discovery of the first order. They became friends. Their friendship was soon cemented by their undertaking the joint labours which have inseparably united their names in the annals of science. Fifteen memoirs were published by the two friends. First in importance stands their research on *Oil of bitter almonds*. It was one of the most prolific of their joint investigations. It exercised a most important influence in the growth of chemical theory by establishing in organic chemistry the conception of *compound radicles*. The idea of compound radicles was not absolutely new when Liebig and Wöhler applied it to oil of bitter almonds, for Berzelius had, in 1820, attempted to compare the constitutions of organic substances with those of inorganic compounds by the use of such a conception, whilst it was known from the researches of Gay-Lussac that cyanogen acts very much like an element. But the real development of the existing idea that organic compounds owe their characteristics to the radicles which they contain was mainly brought about by Liebig and Wöhler's memorable research entitled, "Upon the Radicle of Benzoic Acid." In this they proved that in numerous transformations of oil of bitter almonds, and of chlorine and bromine compounds prepared from it, a radicle of the composition  $C_7H_5O$ , which they termed *benzoyl*, remained unaltered. They showed by convincing experiments that this radicle may be assumed as present in benzoic acid, benzoyl, chloride, bromide, and iodide, &c., and that it behaves in these compounds like an element.

|                             |                |
|-----------------------------|----------------|
| Oil of bitter almonds ..... | $C_7H_5O.H$ .  |
| Benzoic acid .....          | $C_7H_5O.OH$ . |
| " chlorine .....            | $C_7H_5O.Cl$ . |
| " bromide .....             | $C_7H_5O.Br$ . |
| " iodide .....              | $C_7H_5O.I$ .  |
| " cyanide .....             | $C_7H_5O.CN$ . |

The joint work of Liebig and Wöhler continued till 1838, when

\* A paper read before the People's Palace Chemical Society, February, 1896.



investigation of uric acid was published. Their experiments showed that this subject is as interesting to the chemist as to the biologist. The readiness with which it takes part in chemical reactions is such that, in a single research, they added no less than 16 instances to the list of organic compounds.

Wöhler foresaw the direction in which organic chemistry was to advance. From their researches on uric acid they said:—The philosophy of chemistry must draw the conclusion that the synthesis of all organic compounds which are not organised must be upon not merely as probable, but as certain of ultimate achievement.

Sugar, salicin, and morphine will be artificially prepared. As we are ignorant of the road by which this end will be reached, since the proximate constituents required for building up these substances are not known to us; but these the progress of science cannot fail to

was the last great research undertaken by these two friends. Soon afterwards turned his attention to agricultural and physiological chemistry, whilst Wöhler thereafter chiefly devoted himself to organic chemistry.

(To be continued.)

## MICROSCOPICAL AND BACTERIOLOGICAL EXAMINATION OF WATER.

By W. P. MASON.

THE PROPOSAL of the recent articles upon this question, which have appeared in the English papers, it is noteworthy that there is a tendency among physicians and civil engineers to belittle the bacteriologist's opinion regarding the potability of a water, and to pin their faith exclusively upon what the bacteriologist may have to say upon the subject. This feeling is strengthened by the publication of the results of such trials as that undertaken by the London Local Government Board, in which it will be remembered water samples purposely contaminated with typhoid germs were sent for analysis to one of the leading chemists and were by him pronounced pure. Those who set special value upon such a test of methods as the bacteriologist and who consider it quite final as showing the inability of the bacteriologist to detect pollution in a liquid which the bacteriologist would pronounce very foul, should remember that such a sample could not be found in practice, and that the very conditions which it was prepared, eliminated the chemical items indicating pollution, while it increased tremendously the signs governing the bacteriological side of the case.

The bacteriologist sought for the Eberth bacillus, and, very naturally, found it in a water purposely sown with a culture of the germ. The chemist looked for those elements which always occur in sewage-water, whether the sewage be from sources of disease or otherwise, not finding them, he pronounced the water to be what it was, free from sewage addition.

Water, as it occurs in practice, contains an immense quantity of material other than that productive of disease, and it is upon just this material, relatively harmless, but constantly present, material that the chemist bases his opinion upon which he bases his opinions.

It is impossible to say whether or not a sewage-laden water is diseased on any particular date, for to him all sewage is alike, but he knows the water, for the reason that, although it may be harmless at the time, it is impossible to predict what may be its condition to-morrow. Recently, I have been requested to make a bacteriological examination of the water of a certain well, in order to determine if it be polluted by neighbouring cesspools.

A physician who made the request was impressed with belief in the great value of such an examination and the comparative uselessness of chemical analysis.

I am quite convinced that, had I followed his suggestion, I should have gained nothing in vain for any specific microbe, but inasmuch as upon a chemical analysis, I found that the "chlorine" ran twenty-four parts per million, which is about ten times the local "normal," and the "nitrogen" read nine parts per million in place of 0.116, I could not have the water off-hand without going further.

There is simply no comparison between the two methods in question for the problems of this class, and the value of chemistry is still more needed in those instances where it is possible to introduce common lithium chloride into a source of suspected pollution, and then an increased chlorine or presence of lithium in the water of the wells in legal cases touching upon this point of contamination of wells, and, for instance, the chemical testimony is especially strong. The matter of determining the suitability of a stream for city water supplies, the services of the bacteriologist should be unquestionably required, but it is doubtful if his report can be considered of more importance than that of the chemist.

In a chemical analysis, by comparing the water taken at the site of the suspected intake with that from the same stream above all points of

possible pollution, can indicate whether or not up stream contamination is felt at the lower point; nor is it necessary that the polluting sewage be from pathogenic sources in order that its presence may be recognised.

As Dr. Dupré has pointed out, chemistry in such cases anticipates what may happen in the future, and, by timely advice, may prevent an outbreak of disease, while, on the other hand, the discovery of disease germs in a water is only possible after the water has become infected.

Bacteriology is of especial value, and greatly superior to chemistry, for the testing of filters and watching any variation in their efficiency.

For this purpose the simple count of germs per c.c. is most valuable, and differentiation is a secondary matter; for the assumption is a just one that a filter which will remove the harmless bacteria, will take out the objectionable ones as well.

It is very far from my desire to decry the value of bacteriology, but I cannot but feel that in their enthusiasm over the great triumphs of the new science, the people at large have gone slightly "bacteria mad," and are apt to expect more than can be furnished by the means and information now available.

## Trade Notes.

**THE CAMEL HAIR BELTING CASE.—VERDICT FOR THE APPELLANTS.**—In the House of Lords, on Thursday, the Lord Chancellor gave his reserved judgment in the case of Reddaway v. Banham. The decision of the Court of Appeal was reversed, and judgment given for Messrs. Reddaway and Co. with costs. The full judgment of the Lord Chancellor and Lord Herschell will be given next week.

**SOCIETY OF CHEMICAL INDUSTRY.—Liverpool Section.**—The annual general meeting of this Section will be held on Wednesday, April 1st, in the Chemical Theatre, University College. The agenda is as follows:—(1) Election of Officers for the Session, 1896-7; (2) Miscellaneous Communications; (3) "A modified Schrötter Apparatus for the estimation of Carbonic Acid." By Dr. C. A. Kohn. (4) "Wood Cellulose manufacture in Scandinavia." By Mr. J. Beveridge. (5) "Calculation of the amount of steam required to dry a ton of paper or pulp." By Mr. J. Beveridge.

**SOCIETY OF CHEMICAL INDUSTRY.—Nottingham Section.**—The sixth meeting of the Session will be held on Wednesday, April 15th, in Room 12, Derby Mechanics' Institution, Wardwick, (next to Free Library), Derby, at 7-30 p.m. Business:—(1) Mr. John White, F.I.C. (County Analyst for Derbyshire), will read a paper on "Filtration and Domestic Filters." He will exhibit specimens of filters. (2) The Chairman will communicate a note on "The Corrosion of Iron by Tar," and exhibit some specimens. This notice is issued earlier than usual to remind members that two very interesting lectures will be delivered in the large theatre at the University College, Nottingham.—On March the 26th at 8 p.m. Professor William Ramsay, F.R.S., will lecture on Argon and Helium (the new gases). On March 31st, at 8 p.m., Professor W. H. Heaton, M.A., will lecture on "The new Photography." The admission will be by *ticket only*, price 2d., obtainable of the Secretary at the College. If to be sent by post a penny stamp must be enclosed. Early application is advisable as the seating accommodation is limited.

## Market Reports.

### TAR AND AMMONIA PRODUCTS.

Benzols are steady: 90's are quoted 2s. 3d. for prompt, 2s. 2d. for three months, and 2s. 1d. to the end of the year; 50/90's are firm at 1s. 8d. Carbolie acids are firm, with 60% crude at 2s. 3d. and 40% crystals at 8½d. Crude naphtha is unaltered at 9d., but solvent is easier, the closing quotation being 1s. 4d. Pitch weak at 33s. 6d. to 34s., f.o.b. East Coast.

Sulphate of ammonia is very feeble. Makers are trying to clear their stocks at any price, and consequently the market is rather upset. Beekton is quoted £8., London outside makes £8. 2s. 6d., Liverpool £8. 3s. 9d. to £8. 5s., Hull £8. 3s. 9d., and Leith £8. 3s. 9d., all prompt. Nitrate of soda quiet, but steady.

### LIVERPOOL OIL AND COLOUR MARKET.

WEDNESDAY.

**OILS.**—Palm oil has fallen in price, and is even now flat at the reduction. Lagos has been sold at £19 10s. for March-April delivery. Olive in but small demand, still prices keep firm, and makers do not seem over anxious to sell. There is no change in linseed, Liverpool makes being quoted 19s. 6d. to 21s. per cwt. in export casks. There is not much doing in cottonseed. Liverpool refined stands at 17s. to



## TYNE CHEMICAL REPORT.

TUESDAY.

a slightly better demand for chemicals, and with the near the Baltic navigation, more business is anticipated. remain unaltered. Soda crystals £2. 2s. 6d. per ton, gross tally. Sulphur £3. 17s. 6d. per ton. Caustic 76/77% £9. 70% £7. 10s. to £7. 15s. per ton. Pig powder, softs, £7. 5s. per ton, nett; hards, £7. 10s. per ton, nett. Soda, 76/77%, £9. 5s. per ton, nett; do., 70%, £7. 15s. per ton; recovered sulphur, 2 cwt. bags, £3. 17s. 6d. per ton, nett; 48%, £3. 15s. per ton, nett; do., 52%, £3. 17s. 6d. per ton, nett; do., 56%, £4. per ton, nett; alkali, 36%, £2. 15s. per ton; white alkali, 48%, £4. 10s. per ton, nett; do., 50%, per ton, nett; do., 52%, £5. per ton, nett; hyposulphite of soda, 2 cwt. casks, £6. 5s. per ton, nett; do., 1 cwt. kegs, £7. 10s. per ton, nett; silicate of soda, 75° Tw., £2. 12s. 6d. per ton, nett; do., 70° Tw., £3. per ton, nett; do., 140° Tw., £3. 7s. 6d. per ton, nett; soda crystals, casks, £2. 2s. 6d. per ton, nett; do., 2 cwt. bags, £2. 2s. 6d. per ton, nett weight; of potash, 5d. per lb., less 6%; pearl hardening, on, nett; pure white sulphate of alumina, £3. 17s. 6d. per ton, nett; blanc fixe, £7. 5s. per ton, nett; chloride of barium, crystals, £6. 15s., per ton, nett; do., 90 95%, crude calcined, on, nett; sulphide of barium, crystals, £4. 15s. per ton, nett; of alumina, £30. per ton, nett; aluminate of soda, £30. per ton, nett.

—South Durham salt steady at 9s. per ton, f.o.b. Tees.

—The demand here is a little fuller, but prices remain unchanged. Bunker coals are rather steadier. Coke is firm, and there is a easing demand both locally and for outside the district. Prices are:—Best Northumbrian steam, 8s. to 8s. 6d. per ton, qualities, 7s. to 7s. 6d. per ton; small steam, 3s. 6d. per ton; bunker coals, unscreened, 6s. 6d. to 6s. 9d. per ton, quiet, 7s. to 7s. 3d. per ton; coke, very firm, at 14s. 6d. per ton.

## L PAINT, OIL, AND COLOUR REPORT.

TUESDAY.

The markets are little changed, with the exception of oil, which is quoted at somewhat lower rates. The imports compared with the same time a year ago, have been:—2,082 quarters, against 101,634 quarters; rapeseed, 12,959 against 25,502 quarters; cottonseed, 55,410 tons, against 15; olive oil, 6,280 casks, against 2,757 casks; rape oil, 5, against 3,247 casks; oilcakes, 5,336 tons, against 4,549 tons, 8,785 cwt., against 3,436 cwt.; bones, 3,264 tons, 171 tons; turpentine, 6,220 barrels, against 2,991 barrels. It has declined 7s. 6d. per ton on the spot, closing with 18s. naked. Forward positions have kept fairly steady: quoted 18s. 3d., and for May-August or September-December buyers at 18s. 4½d. Boiled and refined, £1. to £2. per ton. The export for the week has been 1,240 cwt. Refined remains dull at 15s. naked, spot; April quoted 15s. 1½d.; st. 15s. 7½d. sellers; casks £1. and ordinary barrels per ton extra. The export of refined for the week has been 10 cwt. Olive oil again cheaper, quoted from £26, f.o.b. astor oil from 2½d. to 2¾d. per lb. for first pressure. Turpentine from £1. 1s. 3d. per cwt. Cod oil scarce, £17. per ton. Boiled siccative oil, £13. per ton. Locomotive 2. per ton.

—Linseed cakes remain firm: 95% pure, £6. 2s. 6d.; 55. 17s. 6d.; Americans, £5. 2s. 6d. Oil cakes, £5. to

£5. 2s. 6d. Cotton cakes steady: Best makes, £3. 12s. 6d.; seconds, £3. 10s. Rape cakes: Black Sea, £2. 10s.; East India, £3. 10s.

PAINTS.—The present open weather continues to make manufacturers very busy. The prices are:—White lead and oxide of zinc, unchanged; red lead, £14. 15s. per ton; dry venetian red from £4.; dry ochres from £2. 15s. per ton, in bags or casks; oxide of iron from £6. per ton; black, blue, green, and red colours, in oil, from £11. per ton; ready-mixed paints, in tins, from £24. per ton; paint remover, £1. 5s. to £1. 10s. per cwt.; imperial black varnish, £5 15s. per ton. Oak varnish, 5s. 6d. per gallon.

## New Companies.

**Chemical Glass Works, Ltd.**—CAPITAL, £3,000, in shares of £1 each. This company has been formed to manufacture and deal in chemical and other kinds of glass.

**Thos Worth and Co., Ltd.**—CAPITAL, £20,000, in £10. shares. This company has been formed to acquire and carry on the business of indiarubber manufacturers now carried on by T. Worth and Co., at Edge-lane, Droylsden, and to trade as chemists, drysalters, etc. The subscribers to the memorandum of association are:—T. Worth, Edge-lane Rubber Works, Droylsden, manufacturer; G. Thorn, 66, Cecil-street, Greenheys, Manchester, traveller; J. S. Hulton, 16, Clegg-street, Oldham, accountant; H. Stott, 67, Godson-street, Oldham, accountant; Miss H. Worth, Fairfield-road, Droylsden; J. Prockter, Wallshaw-place, Oldham, draper; A. Greenhalgh, J.P., Radcliffe, bleacher.

**La Frere et Compagnie, Ltd.**—CAPITAL, £10,000, in £5. shares, 600 of which are preference. This company has been formed to carry on the business of chemical manufacturers and agents and blacking manufacturers. The subscribers to the memorandum of association are:—B. Miller, 2, St. Mary's-place, Western-road, Glasgow; W. Miller, 7, Temple-place, Glasgow, housefactor; M. Miller, 2, St. Mary's-place, Western-road, Glasgow, married woman; A. Miller, 2, St. Mary's-place, Western-road, Glasgow, spinster; M. H. Miller, 2, St. Mary's-place, Western-road, Glasgow, spinster; H. J. Miller, 2, St. Mary's-place, Western-road, Glasgow, manufacturing chemist; B. D. Miller, 47, Oswald street, Glasgow, manufacturing chemist.

## Gazette Notices.

## PARTNERSHIPS DISSOLVED.

S. SYMINGTON and J. SMITH, under the style of the Gallow Hill Co., Market Harborough, glue, manure, and chemical manufacturers.

J. BOOTH and G. H. OPENSHAW, under the style of Booth and Openshaw, Black burn, drysalters and oil merchants, etc.

WRIGHT, RUDMAN, and Co., Ashton-under-Lyne, chemical manufacturers.

## BANKRUPTCY ACTS, 1883 and 1890.

## Receiving Orders.

BATEMAN, JOHN, Knaresboro', Lower Tooting, late Stamford-street, Blackfriars S.E., traveller, late oil and waste dealer.

HARNAMAN, J. T., Birmingham, drysalter and oil and colour merchant.

MEYER, SPAULL, and SCHLENGEMANN, St. Mary Axe, E.C., chemical and Australian merchants.

## Adjudication.

MILNES, TOMMY (trading as John Milnes and Sons), Brighouse, carrier and partner in the firm of Savory and Co., Calder Chemical Works, Brighouse, drysalters.

## IMPORTS OF CHEMICAL PRODUCTS

AT

## THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

## LONDON.

ending March 14th.

|          |                    |                    |         |                              |
|----------|--------------------|--------------------|---------|------------------------------|
| 300 pks. | Beresford & Co.    | Alum—              | 46 cks. | R. W. Greeff & Co.           |
| 244      | A. & M. Zimmermann | Holland,           | 24      | F. Claydon & Co.             |
|          |                    | Belgium,           | 14      | W. G. Taylor & Co.           |
|          |                    | Holland,           | 14      | R. W. Greeff & Co.           |
|          |                    | Belgium,           | 24      |                              |
| 20 drs.  | Ryley & Co.        | Ammonium Chloride— |         |                              |
|          |                    | Holland,           | 33 pks. | H. Lorenz                    |
|          |                    | Germany,           | 6 cks.  | R. W. Harris                 |
| 7 cks.   | J. Barber & Co.    | Antimony Ore—      |         |                              |
| 42       | Prop. Hay's Wf.    | E. Turkey,         | 64 t.   | French & Smith               |
| 39       | P. Hecker & Co.    | Asbestos—          |         |                              |
|          |                    | Belgium,           | £125    | Rosenberg & Co.'s Successors |

|                  |          |                    |
|------------------|----------|--------------------|
| Germany,         | 90       | T. H. Lee          |
| Barium Chloride— |          |                    |
| Germany,         | 265 pks. | Petri Brs.         |
| Barium Hydrate—  |          |                    |
| Belgium,         | 6 pks.   | W. Balchin         |
| Barium Peroxide— |          |                    |
| Germany,         | 10 cks.  | L. & I. D. Jt. Co. |
| Barytes—         |          |                    |
| Belgium,         | 218 pks. | J. L. Lyon & Co.   |
| "                | 200 bgs. | Burrell & Co.      |
| Germany,         | 7 cks.   | H. Lambert         |

|               |         |                              |
|---------------|---------|------------------------------|
| Holland,      | 23      | W. Harrison & Co.            |
| Belgium,      | 71      | Fleming's Oil & Chemical Co. |
| Boracic Acid— |         |                              |
| Italy,        | 4 pks.  | Beresford & Co.              |
| Camphor—      |         |                              |
| Germany,      | 4 pks.  | L. & I. D. Jt. Co.           |
| Japan,        | 1 cs.   | Luca Andreini                |
| Germany,      | 34 tubs | City Coml. Wf. Co.           |
| "             | 68      | Lewis & Peat                 |
| Japan,        | 74      | S. Figgis & Co.              |
| Hong Kong,    | 108     | "                            |



|                                      |                               |                          |          |                               |                               |                                |                                |
|--------------------------------------|-------------------------------|--------------------------|----------|-------------------------------|-------------------------------|--------------------------------|--------------------------------|
| <b>Caoutchouc—</b>                   |                               |                          |          | <b>Lead Acetate—</b>          |                               |                                |                                |
| E. Indies, 38 c.                     | Lewis & Peat                  | "                        | 69       | Germany, 6 cks.               | Petrifite, Ltd.               | Holland, 160 cs.               | G. Rahn & Co.                  |
| Penang, 54                           | Prop. Bull Wf.                | "                        | 175      | "                             | "                             | "                              | Phillips & Graves              |
| E. Indies, 399                       | Anderson, Weber & Co.         | "                        | 10       | <b>Litharge—</b>              | Germany, 18 cks.              | "                              | Herrn, Perno, & Co.            |
|                                      |                               | "                        | 143      | Germany, 18 cks.              | H. Wallace & Co.              | Belgium, 190                   | Leach & Co.                    |
|                                      |                               | "                        | 20       | <b>Magnesium Sulphate—</b>    |                               | 571                            | F. Claydon & Co.               |
| Germany, 39                          | H. Kiver & Co.                | "                        | 6        | Germany, 204 bgs.             | Berger, Kahler, & Co.         | France, 330                    | E. & T. Pink                   |
| Belgium, 1                           | Stobbs, Wilson & Co.          | "                        | 57       | "                             | Jessop & Co.                  | Holland, 210                   | T. H. Lee                      |
|                                      |                               | "                        | 275      |                               |                               | Belgium, 131                   | J. Barber & Co.                |
| France, 15                           | Prop. Bull Wf.                | "                        | 12       | <b>Manganese—</b>             |                               | U. States, 100 bgs.            | Oblenschlager Bros.            |
| "                                    | Procter Bros.                 | "                        | 147      | Germany, 12 t.                | Fellows, Morton, & Co.        | Belgium, 250 cs.               | T. H. Lee                      |
| "                                    | H. Johnson & Sons             | "                        | 90       | "                             | "                             | "                              | T. P. Priestley                |
| <b>Carbolic Acid—</b>                |                               | "                        | 39       | Japan, 25                     | F. Harberlin                  | Germany, 2,434                 | Horne & Co.                    |
| Holland, 13 cks.                     | J. Owen                       | "                        | 52       | <b>Manore—</b>                |                               |                                |                                |
| <b>Castor Oil—</b>                   |                               | "                        | 39       | Sweden, 211 t.                | Anglo-Swedish Co., Ltd.       | <b>Stearine—</b>               |                                |
| Italy, 1 cs.                         | Major & Field                 | Germany, 20              | 20       | Germany, 100                  | F. W. Berk & Co.              | France, 71 bgs.                | Beresford & Co.                |
| E. Indies, 50                        | Co-op. Ltge. Association. Ld. | Holland, 6               | 6        |                               |                               | "                              | Beck & Pollitzer               |
| France, 30 brls.                     | Anderson, Weber & Co.         | E. Indies, 20            | 20       | <b>Methyl Alcohol—</b>        |                               | "                              | Walbaum & Tosetti              |
|                                      |                               | "                        | 22       | Belgium, 17 dms.              | Stein Bros.                   | Holland, 127                   | H. Hill & Son                  |
| <b>Caustic Potash—</b>               |                               | Norway, 226              | 226      | France, 40                    | A. Chapman                    | Belgium, 62                    | 78 pks.                        |
| Belgium, 6 dms.                      | Petri Bros.                   | "                        | 5        | Germany, 17                   | Spies Bros.                   | <b>Sulphur—</b>                |                                |
| <b>Chemicals (otherwise under.)—</b> |                               | "                        | 29       | Belgium, 5                    | H. Lorenz                     | Italy, 90 t.                   | G. Boer & Co.                  |
| Germany, £38                         | Phillips & Graves             | "                        | 118      | "                             | Lister & Biggs                | "                              | F. C. Devon & Co.              |
| Holland, 19 drs.                     | J. Owen                       | "                        | 7        | <b>Mica—</b>                  |                               | "                              | A. Hunter & Co.                |
| Germany, 4                           | Craven & Co.                  | "                        | 12       | Ceylon, £25                   | F. Braby & Co.                | "                              | W. C. Bacon & Co.              |
| "                                    | F. W. Berk & Co.              | "                        | 25       | "                             | E. Davis & Co.                | "                              | J. T. Morton                   |
| Belgium, 65                          | T. Palmer                     | "                        | 520      | <b>Molasses—</b>              |                               | "                              | J. M. Niblett                  |
| France, 78                           | Flageolet & Co.               | E. Indies, 520           | 520      | U. States, 205 brls.          | J. Newcomb                    | "                              | E. & T. Pink                   |
| Holland, 12                          | J. Barber & Co.               | <b>Logwood</b>           |          | France, 69 cks.               | W. Harrison & Co.             | "                              | C. Tennant, Sons, & Co.        |
| Aden, 7                              | Ross & Deering                | B. W. L., 35 t.          | 35 t.    | Spain, 213 bgs.               | J. L. Lyon & Co.              | "                              | J. Greig                       |
| Germany, 191                         | T. H. Lee                     | <b>Myrabolams</b>        |          | Italy, 12 brls.               | Burrell & Co.                 | "                              | Sanchez & Co.                  |
| Holland, 20                          | Beresford & Co.               | Belgium, 34 bgs.         | 34 bgs.  | France, 16 cks.               | B. & F. Wf. Co.               | "                              | C. Vincent                     |
| "                                    | H. Lorenz                     | <b>Orchella</b>          |          | U. States, 126 brls.          | Prop. Hay's Wf. Co.           | <b>Sulphur Chloride—</b>       |                                |
| Germany, 370                         | A. & M. Zimmermann            | Colombo, 1 bg.           | 1 bg.    | Holland, 1                    | Phillips & Graves             | Holland, 20 pks.               | Typek & King                   |
| <b>Copperas—</b>                     |                               | Portugal, 25 bls.        | 25 bls.  | <b>Phosphate—</b>             |                               | <b>Tartaric Acid—</b>          |                                |
| Germany, 8 cks.                      | A. & M. Zimmermann            | <b>Shumac</b>            |          | Belgium, 25 t.                | B. Jacob & Sons               | France, 7 cks.                 | B. & F. Wf. Co.                |
| <b>Cream of Tartar—</b>              |                               | Italy, 330 bgs.          | 330 bgs. | France, 135 t.                | A. Hunter & Co.               | Holland, 10                    | Beresford & Co.                |
| Spain, 21 pks.                       | Thames S. T. & L. Co.         | "                        | 750      | <b>Plumbago—</b>              |                               | "                              | B. & F. Wf. Co.                |
| France, 2 brls.                      | McNamara & Co.                | "                        | 225      | Colombo, 419 cks.             | C. Rowbotham                  | <b>Ultramarine—</b>            |                                |
| "                                    | W. C. Bacon & Co.             | "                        | 500      | Germany, 4                    | Craven & Co.                  | Holland, 4 cks.                | J. Barber & Co.                |
| Spain, 10                            | "                             | <b>Tanner's Bark</b>     |          | E. Indies, 397                | Parry & Co.                   | "                              | Taylor & Co.                   |
| France, 14                           | B. & F. Wf. Co.               | Belgium, 26 t.           | 26 t.    | Colombo, 74                   | G. Ward & Son                 | Belgium, 18 pks.               | Phillips & Graves              |
| Italy, 20                            | "                             | Adelaide, 151            | 151      | Italy, 20 bgs.                | Bri. Anti Foul. Comp.         | Holland, 2                     | W. Harrison & Co.              |
| France, 25                           | "                             | Belgium, 23              | 23       | Colombo, 145 cks.             | R. G. Hall & Co.              | Germany, 24                    | 20 cks. Steinhoff, Sons, & Co. |
| "                                    | W. V. Robinson                | U. States, 20            | 20       | Germany, 30 cs.               | J. Thredder, Son, & Co.       | Holland, 1 brl.                | Little & Johnston              |
| Holland, 30                          | Beresford & Co.               | Adelaide, 16             | 16       | "                             | J. Sinclair & Son             | "                              | Herrn, Perno, & Co.            |
| Italy, 58                            | B. Jacob & Sons               | <b>Valonia</b>           |          | "                             | T. H. Lee                     | <b>Varnish—</b>                |                                |
| "                                    | Fellows, Morton & Co.         | A. Turkey, 1 t.          | 1 t.     | Germany, 30                   | B. Galloway                   | Germany, 3 pks.                | H. Lambert                     |
| France, 5                            | Ross & Deering                | "                        | 203      | <b>Potash—</b>                |                               | Belgium, 6                     | Stobbs, Wilson, & Co.          |
| <b>Creosote Salt—</b>                |                               | "                        | 50       | Germany, 395 c.               | W. G. Blagden                 | U. States, 5                   | Allan Bros. & Co.              |
| Germany, 2 cks.                      | Petri Bros.                   | <b>Farina—</b>           |          | <b>Potassium Bicarbonate—</b> |                               | <b>White Lead—</b>             |                                |
| <b>Dye-stuffs—</b>                   |                               | Holland, 100 bgs.        | 100 bgs. | Holland, 10 cks.              | A. & M. Zimmermann            | Holland, 50 cks.               | Taylor & Co.                   |
| <b>Aniline</b>                       |                               | <b>Gamboge—</b>          |          | <b>Potassium Carbonate—</b>   |                               | Belgium, 34                    | Borrell & Co.                  |
| Holland, 6 pks.                      | L. C. & D. Rly.               | Singapore, 62 cs.        | 62 cs.   | Germany, 13 c.                | A. J. Luke & Co.              | Holland, 48                    | T. & W. Farmico                |
| <b>Annatto</b>                       |                               | E. Indies, 2             | 2        | France, 4 cks.                | J. A. Reid                    | "                              | Perkins & Homer                |
| U. States, 48 pks.                   | Anderson, Weber & Co.         | <b>Glucose—</b>          |          | <b>Potassium Chlorate—</b>    |                               | Germany, 33                    | F. G. Clifford                 |
| France, 5 cs.                        | B. & F. Wf. Co.               | U. States, 850 pks.      | 850 pks. | Belgium, 40 cks.              | J. W. Dysdale & Co.           | "                              | H. Lambert                     |
| <b>Argols</b>                        |                               | "                        | 1,250    | <b>Potassium Chloride—</b>    |                               | Holland, 56                    | Petri Bros.                    |
| Italy, 762 bgs.                      | H. Jacob & Sons               | "                        | 250      | Holland, 30 cks.              | H. Johnson & Sons             | "                              | D. Storer & Son                |
| "                                    | Thames S. T. & L. Co., Ld.    | "                        | 1,481    | Germany, 200 bgs.             | W. G. Blagden                 | "                              | Randall Bros.                  |
| <b>Cochineal</b>                     |                               | "                        | 305      | <b>Pumice Stone—</b>          |                               | "                              | Spies Bros.                    |
| Canaries, 6 bgs.                     | W. M. Smith & Sons            | "                        | 300      | Italy, 5 t.                   | Stobbs, Wilson, & Co.         | France, 20                     | A. & M. Zimmermann             |
| <b>Cuteh</b>                         |                               | "                        | 1,481    | "                             | J. F. Power, Ltd.             | "                              | J. Watt & Son                  |
| Burmah, 200 pks.                     | Brown & Elmslie               | "                        | 50       | <b>Pyrites—</b>               |                               | <b>Wood Pulp—</b>              |                                |
| "                                    | Hoare, Wilson & Co.           | "                        | 300      | Spain, 1,200 t.               | Naylof, Benzoni, & Co.        | U. States, 24 pks.             | C. Ward                        |
| "                                    | Hicks, Nash & Co.             | "                        | 50       | <b>Rosin—</b>                 |                               | Norway, 164                    | Hecker & Co.                   |
| Singapore, 50                        | Prop. Hay's Wf.               | "                        | 2,250    | U. States, 1,329 brls.        | T. Nickels & Co.              | "                              | E. J. & W. Goldsmith           |
| Belgium, 20 cs.                      | T. H. Lee                     | Germany, 25              | 205      | <b>Saltpetre—</b>             |                               | Sweden, 240                    | W. G. Taylor & Co.             |
| Rangoon, 969                         | A. Howden & Co.               | France, 200              | 200      | Singapore, 567 bgs.           | 48 cks. Lucas & Spencer's Wf. | "                              | M. G. Skramnes                 |
| <b>Extracts</b>                      |                               | Germany, 25              | 198      | "                             | "                             | "                              | W. E. Bott & Co.               |
| Holland, 1 ck.                       | Loder, Son & Co.              | "                        | 100      | <b>Soda Ash—</b>              |                               | "                              | Johnsen & Jorgensen            |
| Denmark, 2 brls.                     | M. D. Co.                     | "                        | 700      | Holland, 1,000 bgs.           | R. Waters                     | Norway, 500                    | M. G. Skramnes                 |
| "                                    | Crosse & Blackwell            | "                        | 250      | <b>Sodium Acetate—</b>        |                               | "                              | W. E. Bott & Co.               |
| U. States, 50 bxs.                   | W. Burton & Sons              | "                        | 250      | France, 14 cks.               | H. Lorenz                     | <b>Zinc Oxide—</b>             |                                |
| Austria, 250                         | A. J. Humphery                | <b>Glue—</b>             |          | <b>Sodium Bichromate—</b>     |                               | Holland, 500 cks.              | Soundy & Son                   |
| U. States, 120                       | "                             | "                        | £1,742   | Germany, 51 cks.              | C. Tennant, Sons, & Co.       | Germany, 100 brls.             | M. Ashby, Ltd.                 |
| <b>Gambier</b>                       |                               | <b>Infusorial Earth—</b> |          | <b>Sodium Nitrate—</b>        |                               | "                              | H. Lambert                     |
| Singapore, 464 bgs.                  | S. Barlow & Bros.             | Sydney, £50              | £50      | Holland, 7 cks.               | Phillips & Graves             | "                              | J. Matten                      |
| "                                    | Nat. S. S. Co.                | <b>Iron Perchloride—</b> |          | <b>Sodium Sulphate—</b>       |                               | <b>Zinc Peroxide—</b>          |                                |
| "                                    | E. Boustead & Co.             | Holland, 14 cks.         | 14 cks.  | Holland, 30 cks.              | H. Wallace & Co.              | Germany, 1 ck.                 | H. Lambert                     |
| "                                    | Brown & Elmslie               | "                        | 8        | <b>Starch—</b>                |                               | <b>Zinc White—</b>             |                                |
| "                                    | Union L. Co.                  | "                        | 32       | Germany, 200 pks.             | L. Sutro & Co.                | Holland, 100 cks.              | Borrell & Co.                  |
| Singapore, 1,221                     | Beresford & Co.               | "                        | 78       | "                             | Phillips & Graves             | Belgium, 50                    | Norris & Joyce                 |
| <b>Indigo</b>                        |                               | "                        | 84       | <b>Sodium Acetate—</b>        |                               | <b>LIVERPOOL.</b>              |                                |
| Austria, 19 cts.                     | L. & I. D. Jt. Co.            | "                        | 91       | France, 14 cks.               | H. Lorenz                     | <b>Week ending March 12th.</b> |                                |
| E. Indies, 236                       | Elkan & Co.                   | "                        | 96       | <b>Sodium Bichromate—</b>     |                               | <b>Acid—</b>                   |                                |
| "                                    | Arbuthnot, Latham & Co.       | "                        |          | Holland, 7 cks.               | Phillips & Graves             | Bremen, 1 cs.                  |                                |
| "                                    | J. H. Hall & Wilson           | "                        |          | "                             | "                             | <b>Arachide Oil—</b>           |                                |
| "                                    | Taylor Bros.                  | "                        |          | <b>Sulphur—</b>               |                               | Marseilles, 1 brl.             |                                |
| "                                    | Ralli Bros.                   | "                        |          | Germany, 200 pks.             | L. Sutro & Co.                | <b>Barytes—</b>                |                                |
| "                                    | J. Finlay & Co.               | "                        |          | "                             | Phillips & Graves             | Antwerp, 150 bgs.              | 39 cks.                        |
| "                                    | E. Bower & Co.                | "                        |          | <b>Sodium Nitrate—</b>        |                               | <b>Bone Meal—</b>              |                                |
| "                                    | T. Barlow & Bros.             | "                        |          | Austria, 10                   | City Coml. Wf.                | Bombay, 4,997 bgs.             |                                |
| "                                    | Walker, Munsie, & Co.         | "                        |          | Holland, 302                  | Little & Johnston             |                                |                                |
| "                                    | Croydale & Co.                | "                        |          | U. States, 100                | Beck & Pollitzer              |                                |                                |



as N.S. 1 ck. J. J. Langley  
raiso, 1,030 sks.  
**Oil**—  
illes, 1 ck. 422 brls. 110 cs.  
30 half-cts. 10  
**els (otherwise undescribed)**  
urg, 10 cs. Evans,  
Sons & Co.  
**Clay**—  
rdam, 25 bgs.  
**Acid**—  
rd, 65 cks. 30 bxs. 5 hf. pps.  
5  
**Il**—  
urg, 62 brls. Evans,  
Sons & Co.  
**rs**—  
3 cks. Bennett, Winter-  
bottom & Co.  
8 brls. J. T.  
Fletcher & Co.  
rdam, 30 50 cs.  
urg, 14  
**of Tartar**—  
lona, 5 cks. 20 brls.  
gona, 5 pks. Sachse &  
Klemm  
**uffs**—  
natto  
taux, 13 cks.  
20 R. J. Francis  
& Co.  
**ols**  
to, 23 cks.  
rineal  
almas, 3 bgs. Canary Islands  
Trading Co.  
**tracts**  
delphia, 25 brls.  
burg, 100 bgs.  
t, 25 cks. J. T.  
Fletcher & Co.  
York, 10 W. Bingham  
**Divi**  
burg 128 bgs.  
**abolams**  
ay, 1,990 bgs.  
**hella**  
a, 80 brls. A. Barbosa  
& Co.  
**fron**  
cia, 2 cs.  
**umac**  
no, 350 bgs.  
**lonia**  
na, 62 t. Barry Bros.  
50 1,781 bgs.  
414 C. G.  
Nicolaidis  
516 L. J. Vuzunaras  
**h Chalk**—  
ern, 4 cs.  
**ue**—  
more, 250 brls.  
York, 100 T. M. Duche  
& Sons  
250  
100  
en, 40 bgs.  
rdam, 20 bgs. 7 cs.  
burg, 40  
fazaire, 1 bl.  
c—  
raiso, 24 brls. A. Gibbs & Sons  
19 brls.  
**stone**—  
erp, 2 cs. 7 cts.  
2 J. T.  
Fletcher & Co.  
**esium Sulphate**—  
bay, 1 ck. G. Robinson  
& Co.  
**anese Ore**—  
u, 1 brl.  
**te**—  
erry, 7 bgs.  
**elles**, 49 cks.  
**elles**, 31 cs.  
York, 30 T. Nickels  
& Son  
burg, 10 dms.

**Paraffin Scale**—  
Philadelphia, 100 brls.  
Baltimore, 200  
**Phosphate**—  
Antwerp, 120 t. 235 bgs.  
**Potash**—  
Portland, 27 brls. Makin &  
Bancroft  
Antwerp, 5 cks.  
**Pumice Stone**—  
Leghorn, 12 cs.  
**Pyrites**—  
Huelva, 7,175 t. Matheson & Co.  
**Rosin**—  
Boston, 300 brls.  
**Saltpetre**—  
Hamburg, 5 cks. 30 kgs. 2 brls.  
Karachi, 89 bgs.  
**Soap**—  
Marseilles, 2 bxs. M. Bell  
Cadix, 226 cs.  
Newport News, 379 brls.  
**Soapstone**—  
Bordeaux, 300 bgs.  
**Sodium Nitrate**—  
Iquique, 1,815 bgs. Balfour  
Williamson  
**Starch**—  
Baltimore, 600 sks.  
Antwerp, 20 cs. 200 50 bgs.  
New York, 47  
Rotterdam, 35 J. T. Fletcher  
& Co.  
Antwerp, 160 D. Currie & Co.  
**Hainburg**, 30 bgs.  
**Stearine**—  
Antwerp, 110 bgs. 110 brls  
**Sulphur**—  
Catania, 110 bgs. 110 brls  
**Tallow**—  
B. Ayres, 654 hds. Th. Bracht  
& Co.  
14 pps. 12 hf. pps. Cabes-  
yas Estancia Co.  
121 1,197  
100 tcs.  
Philadelphia, 7 hds. H.  
Brown  
New York, 50 650  
Boston, 300  
River Plate, 15 brls. Rodger,  
Best & Co.  
415 pps. 133 hf. pps.  
San Nicolas, 350 cks.  
**Tartar**—  
Bordeaux, 3 cks.  
Hamburg, 1  
Bordeaux, 1 R. J. Francis  
& Co.  
**Tartaric Acid**—  
Rotterdam, 2 cks.  
**White Lead**—  
Rotterdam, 28 cks.  
Antwerp, 17 brls.  
**Wood Pulp**—  
Rotterdam, 49 brls.  
**Zinc Ashes**—  
Antwerp, 3 cks.  
**Zinc Oxide**—  
Antwerp, 80 brls.  
**Zinc White**—  
Hamburg, 40 cks.

**MANCHESTER.**

Week ending March 14th.

**Albumen**—  
Hamburg, 9 cks.  
**Alizarine**—  
Rotterdam, 148 cks.  
**Ammonium Chloride**—  
Rotterdam, 10 cks.  
Hamburg, 1  
**Barytes**—  
Rotterdam, 19 cks. 55 bgs.  
**Colours**—  
Treport, 10 cks. 4 cs.  
Rotterdam, 76 57 17 bgs.  
142 brls.  
**Cottonseed Oil**—  
Rotterdam, 50 tcs.  
**Dextrine**—  
Stettin, 100 bgs.  
**Dried Blood**—  
Libau, 14 cks. 2 cs. Stott,  
Coker, & Co.

**Extracts**—  
Rotterdam, 7 cks.  
**Farina**—  
Antwerp, 5 bgs.  
Hamburg, 878  
Rotterdam, 50  
**Glue**—  
Fiume, 18 cks. 70 bgs.  
Treport, 17  
Rotterdam, 23 cs. 200  
**Limestone**—  
Antwerp, 2 cs. J. T. Fletcher  
& Co.  
1 crt.  
**Litharge**—  
Rotterdam, 14 cks.  
**Lithopone**—  
Rotterdam, 14 cks.  
**Mineral White**—  
Fiume, 100 bgs.  
**Oxalic Acid**—  
Rotterdam, 30 cks.  
**Pitch**—  
Antwerp, 7 cks.  
**Potash**—  
Rouen, 21 dms.  
Treport, 13 cks.  
**Pyrites**—  
Huelva, 3,069 t.  
**Starch**—  
Ghent, 85 cs. J. T. Fletcher  
& Co.  
Antwerp, 32  
Rotterdam, 60  
Hamburg, 220  
160  
**Tartaric Acid**—  
Rotterdam, 4 cks.  
**Wood Pulp**—  
Rotterdam, 51 brls.  
Fiume, 102  
Christiania, 3,023  
**Zinc Oxide**—  
Rotterdam, 100 cks.  
**Zinc Sulphate**—  
Rotterdam, 1 brl.  
**Zinc White**—  
Rotterdam, 95 brls.

**HULL.**

Week ending March 14th.

**Acetic Acid**—  
Rotterdam, 5 blns. Hutchinson  
& Son  
**Ammonia**—  
Antwerp, 1 cs. Bailey & Leatham  
**Asbestos**—  
Genoa, 7 cs.  
**Barytes**—  
Antwerp, 139 cks. H. F. Pudsey  
Bremen, 41 A. Sanderson & Co.  
Rotterdam, 23 43 bgs.  
Hutchinson & Son  
**Carbolic Acid**—  
Rotterdam, 13 cks. Wilson,  
Sons, & Co., Ld.  
**Castor Oil**—  
Leghorn, 14 cs. Wilson,  
Sons, & Co., Ld.  
New York, 50 brls.  
**Chemicals (otherwise undec.)**—  
New York, 3 dms. Wilson,  
Sons, & Co., Ld.  
Bremen, 4 cks. Todd & Son  
Leghorn, 24 Wilson,  
Sons, & Co., Ld.  
Antwerp, 35 pks.  
Bergen, 65 brls. Wilson,  
Sons, & Co., Ld.  
**Colours**—  
Amsterdam, 2 cks. Hutchinson  
& Son  
Antwerp, 138 bgs. Bailey &  
Leatham  
21 pks. Wilson,  
Sons, & Co., Ld.  
Bremen, 8 cks. Veltmann  
& Co.  
4 Storry, Smithson,  
& Co.  
1 H. Greaves & Co.  
Rotterdam, 3 Wilson,  
Sons, & Co., Ld.  
64 28 cs. W. & C. L.  
Ringrose  
17 pks.

**Cottonseed Oil**—  
New York, 250 brls. Wilson,  
Sons, & Co., Ld.  
**Dextrine**—  
Stettin, 200 bgs. Wilson,  
Sons, & Co., Ld.  
**Dyestuffs**—  
Alizarine  
Rotterdam, 49 brls. 62 cks. W. &  
C. L. Ringrose  
**Annatto**  
New York, 170 bgs. Wilson,  
Sons, & Co., Ld.  
**Logwood**  
Hamburg, 945 pcs. Wilson,  
Sons, & Co., Ld.  
**Valonia**  
Smyma, 3,821 c.  
**Farina**—  
Stettin, 305 bgs. Wilson,  
Sons, & Co., Ld.  
20  
Ghent, 316 cs. Lawrence & Son  
**Glue**—  
Rouen, 16 cks. 10 pks. Rawson  
& Robinson  
Bergen, 5 brls. Wilson,  
Sons, & Co., Ld.  
Hamburg, 20 bgs. Bailey &  
Leatham  
Antwerp, 10 brls.  
Rotterdam, 7 bgs. Hutchinson  
& Son  
Dunkirk, 77 pks. Wilson,  
Sons, & Co., Ld.  
**Glucose**—  
New York, 273 bgs. 350 brls. Wilson,  
Sons, & Co., Ld.  
250 brls.  
**Kaolin**—  
Rotterdam, 245 bgs. Hutchinson  
& Son  
**Ochre**—  
Rouen, 221 cks.  
**Paint**—  
New York, 51 cs. 40 pks. Wilson,  
Sons, & Co., Ld.  
Boston, 29  
**Paraffin Wax**—  
New York, 101 brls. Wilson,  
Sons, & Co., Ld.  
90 bgs.  
**Phosphate**—  
Ghent, 160 t. 500 bgs. Wilson,  
Sons, & Co., Ld.  
**Phosphorus**—  
Hamburg, 1 cs. T. F. Bell & Co.  
**Pitch**—  
Amsterdam, 41 cks. Hutchinson  
& Son  
Antwerp, 1 H. F. Pudsey  
**Potash**—  
Rotterdam, 20 cks. Hutchinson  
& Son  
50 W. & C. L. Ringrose  
Dunkirk, 37 pks. Wilson,  
Sons, & Co., Ld.  
**Pumice Stone**—  
Leghorn, 18 pks.  
**Pyrites**—  
Huelva, 500 t.  
**Rosin**—  
Wilmington, 3,860 brls. J. M. Hamilton  
& Co.  
**Soap**—  
New York, 500 pks. Wilson,  
Sons, & Co., Ld.  
1,000 bxs.  
Naples, 8 cs.  
Marseilles, 2  
Boston, 7  
**Starch**—  
Antwerp, 112 cs. Bailey & Leatham  
Gothenburg, 8 bgs. Wilson,  
Sons, & Co., Ld.  
Bremen, 2,377 cs. Veltmann & Co.  
Amsterdam, 80 W. & C. L. Ringrose  
Rotterdam, 58 Hutchinson & Son  
Amsterdam, 10  
**Stearine**—  
Antwerp, 180 bgs. Wilson,  
Sons, & Co., Ld.  
**Talc**—  
Marseilles, 50 bgs. Wilson,  
Sons, & Co., Ld.  
**Tallow**—  
Boston, 200 tcs.  
Dunkirk, 15 cks. Wilson,  
Sons, & Co., Ld.  
**Tartar**—  
Marseilles, 5 cks.



**Tartaric Acid**—  
Rotterdam, 4 cks. Hutchinson & Son

**Treacle**—  
New York, 1,792 brls. Wilson, Sons, & Co., Ltd

**Ultramarine**—  
Rotterdam, 4 cs. Hutchinson & Son

**Varnish**—  
New York, 12 brls. 32 pks. Wilson, Sons, & Co., Ltd

**Waste Salt**—  
Hamburg, 463 bgs. Bailey & Leatham

**White Lead**—  
Amsterdam, 19 cks. Hutchinson & Son

**Glue**—  
Rotterdam, 33 Antwerp, 34 Ghent, 25 Rotterdam, 92 W. & C. L. Ringrose

**Woolfram**—  
Hamburg, 5 cs. Wilson, Sons, & Co., Ltd

**Wood Pulp**—  
Rotterdam, 9 bls. Hutchinson & Son

**Zinc Oxide**—  
Antwerp, 33 cks. Bailey & Leatham

**Zinc White**—  
Rotterdam, 60 cs. W. & C. L. Ringrose

### GLASGOW.

Week ending March 19th.

**Aluminium Sulphate**—  
Rotterdam, 6 cks. J. Rankine & Son

**Aniline**—  
Rotterdam, 11 cks. 15 cs. J. Rankine & Son

**Aniline Salt**—  
Rotterdam, 9 cks. J. Rankine & Son

**Arachide Oil**—  
Rotterdam, 4 cks. J. Rankine & Son

**Barium Sulphate**—  
Antwerp, 19 cks. 120 bgs.

**Barytes**—  
Rotterdam, 71 pks. 82 cks. J. Rankine & Son

**Caoutchouc**—  
Hamburg, 1 bl.

**Castor Oil**—  
Antwerp, 29 cks.

**Colours**—  
Rotterdam, 45 pks.

Hamburg, 6 cks. Rotterdam, 11 brls. 4 2 bxs. J. Rankine & Son

**Cottonseed Oil**—  
New York, 35 brls.

**Dyestuffs**—  
Alizarine Rotterdam, 64 cks. 46 pks. 3 cs.

**Argols**—  
Bordeaux, 53 cks. 24 bgs.

**Extracts**—  
New York, 10 bxs. Antwerp, 5 cks. Shumac New York, 50 bgs.

**Farina**—  
Delft, 350 bgs.

**Glucose**—  
New York, 1,400 brls.

**Glue**—  
Rotterdam, 1 ck. J. Rankine & Son

**Ochre**—  
Rouen, 38 15 bls. 50

**Oxalic Acid**—  
Rotterdam, 8 cks. J. Rankine & Son

**Painters' Colours**—  
Antwerp, 5 cks.

**Pitch**—  
New York, 50 brls.

**Potash**—  
Rotterdam, 21 cks. J. Rankine & Son

**Soap**—  
Philadelphia, 675 pks.

**Soda**—  
Rouen, 17 brls.

**Starch**—  
Antwerp, 50 cs. Rotterdam, 20 pks. J. Rankine & Son

**New York**, 250 bgs.

**Stearine**—  
Rotterdam, 13 cks. J. Rankine & Son

**Tallow**—  
Baltimore, 50 tres. New York, 90

**Tartar**—  
Bordeaux, 33 cks.

**Treacle**—  
New York, 100 brls. Philadelphia, 113 Waddell & Bryson

**Ultramarine**—  
Hamburg, 6 cs. Rotterdam, 8 cks. J. Rankine & Son

**Varnish**—  
New York, 1 cs. 183 brls.

**White Lead**—  
Rotterdam, 10 cks. J. Rankine & Son

Antwerp, 10 11

**Wood Pulp**—  
Christiania, 50 bls.

**Zinc Oxide**—  
New York, 150 brls. Rotterdam, 10 cks. J. Rankine & Son

**Zinc White**—  
Rotterdam, 10 cks. J. Rankine & Son

### TYNE.

Week ending March 14th.

**Alum Earth**—  
Hamburg, 10 cks. Tyne S. S. Co

**Barium Carbonate**—  
Rotterdam, 134 bgs. Tyne S. S. Co.

**Barytes**—  
Rotterdam, 15 bgs. Tyne S. S. Co

**Castor Oil**—  
Antwerp, 29 brls. Tyne S. S. Co.

**Cod Oil**—  
Bergen, 5 brls.

**Colours**—  
Rotterdam, 1 bl. Tyne S. S. Co. Hamburg, 15 cks. "

**Farina**—  
Hamburg, 100 bgs. Tyne S. S. Co.

**Glue**—  
Hamburg, 4 cks. 20 bls.

**Kieselguhr**—  
Bergen, 210 bgs.

**Pumice Stone**—  
Hamburg, 42 cs. Tyne S. S. Co.

**Rosin**—  
Wilmington, 3,116 brls.

**Salt**—  
Hamburg, 200 t. Clephans & Wiencke

**Soda**—  
Antwerp, 30 bgs. Tyne S. S. Co.

**Starch**—  
Rotterdam, 85 cs. Tyne S. S. Co

**Varnish**—  
Antwerp, 2 brls. Tyne S. S. Co.

**Zinc Oxide**—  
Rotterdam, 25 cks. Tyne S. S. Co. Antwerp, 10 brls. "

### GOOLE.

Week ending March 11th.

**Alum**—  
Rotterdam, 50 bgs.

**Alizarine**—  
Rotterdam, 77 brls.

**Barytes**—  
Hamburg, 100 bgs. 7 cks. Antwerp, 200

**Chemicals (otherwise undescribed)**  
Hamburg, 1 cs.

**Colours**—  
Hamburg, 21 cs. Amsterdam, 3 cks. Ghent, 15

**Dyestuffs (otherwise undescribed)**  
Rotterdam, 123 cks. 50 cs. Boulogne, 44 2 5 pks.

**Farina**—  
Amsterdam, 570 bgs. Delft, 1,283

**Glucose**—  
Hamburg, 40 cks.

**Glue**—  
Rotterdam, 30 bgs.

**Logwood**—  
Monte Christi, 392 t. Belize, 4,529

**Potash**—  
Rotterdam, 150 cks. Dunkirk, 4 30 dms. Calais, 41

**Saltpetre**—  
Hamburg, 2 cks. 85 bgs. Rotterdam, 12 200 85

**Starch**—  
Rotterdam, 29 cs. Amsterdam, 1

**Sulphur Ore**—  
Seville, 825 t. Huerva, 850

**Wood Pulp**—  
Hamburg, 400 bls.

### GRIMSBY.

Week ending March 14th.

**Albumen**—  
Antwerp, 3 cs. Hamburg, 1

**Caoutchouc**—  
Rotterdam, 4 cs. Antwerp, 1 2 bls. Hamburg, 4

**Chemicals (otherwise undescribed)**  
Dieppe, 10 cks. Rotterdam, 10 pks. Hamburg, 6 2 cs.

**Colours**—  
Antwerp, 4 cks. 1 cs. 24 pks. Hamburg, 14 28 78

**Dyes**—  
Hamburg, 6 cks. 10 pks. Antwerp, 98

**Dyestuffs (otherwise undescribed)**  
Dieppe, 24 cks.

**Farina**—  
Hamburg, 20 bgs.

**Starch**—  
Antwerp, 32 cs.

## EXPORTS OF CHEMICAL PRODUCTS

OF

## THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

### LONDON.

Week ending March 18th.

**Acids**—  
Natal, 20 drs. 30 cs. £112

**Alkali**—  
Delagoa Bay, 5 c. £6  
Auckland, 21 t. 1 121

**Ammonium Carbonate**—  
Yokubama, 2 t. 10 c. £80

**Ammonium Chloride**—  
Christiana, 2 t. 12 c. £60  
Galatz, 12 28  
Sydney, 1 ck. 10  
Constantinople, 2 10 92  
Varna, 8 cks. 42  
Bourgas, 6 10

**Ammonium Nitrate**—  
New York, 5 cks. £4

**Ammonium Sulphate**—  
Martinique, 60 t. £517  
Bremen, 100 900  
Amsterdam, 270 2330  
Boston, 51 479

Ghent, 12 1,080  
Demerara, 40 360  
Nevis, 6 2 56  
Ostend, 55 473  
Dunkirk, 294 4 2,571  
Cheribon, 110 990  
Hamburg, 215 1,841

**Anhydrous Ammonia**—  
Antwerp, 106 cs. £543  
Karachi, 6 21  
Sydney, 35 332

**Barium Binocide**—  
Paris, 20 t. 4 c. £680

**Bleaching Powder**—  
E. London, 2 t. 18 c. £35  
Melbourne, 6 72

**Boracic Acid**—  
Brisbane, 10 kgs. £16  
Sydney, 10 c. 13

**Borax**—  
E. London, 6 cs. £27  
Brisbane, 20 kgs. 22  
Sydney, 1 t. 10 c. 30

**Calcium Phosphide**—  
Calcutta, 2 cs. £15

**Carbon Bisulphide**—  
Adelaide, 1 t. £22

**Carbonic Acid**—  
Boston, 10 t. £220

**Caustic Soda**—  
Hamburg, 10 c. £19  
Newcastle, 20 t. 184  
Christchurch, 1 4 81  
Wellington, 11 15  
Solina, 13 9  
Brisbane, 3 3 60  
Algoa Bay, 2 17 57  
Sydney, 2 1 40  
Delagoa Bay, 9 13

**Chemicals (otherwise undescribed)**  
Durban, 33 pks. £39

**Benzol**—  
E. London, 5 cs. 13  
Boulogne, 6 26  
Calcutta, 1 ck. 3 47  
Auckland, 8 c. 12  
Bombay, 1 37  
Mauritius, 10 16

**Citric Acid**—  
Rotterdam, 2 cks. 12 c. £140

Hamburg, 1 5 12 kgs.

**Algoa Bay**, 1 1  
**Brussels**, 1  
**Cape Town**, 1 cs.  
**Lisbon**, 10  
**Bombay**, 12

**Coal Products**—  
**Alizarine**  
Reval, 6 cs. £2 28  
Bordeaux, 7 cks. 180

**Aniline Dyes**  
Sydney, 2 cs. £09

**Aniline Oil**  
New York, 14 drs. £555  
Genoa, 8 70

**Anthracene**  
Rotterdam, 182 cks. £304  
Dusseldorf, 183 107

**Benzol**  
Boulogne, 60 cks. £310  
Amsterdam, 25 50 drs. 61  
Rotterdam, 284 25 runs. 1,177

**Carbolic Acid**  
Rio de Janeiro, 6 cs. £11  
Hamburg, 8 cks. 47  
Marseilles, 75 104  
Cape Town, 100 drs. 80



|                               |              |  |
|-------------------------------|--------------|--|
| <b>Creosote</b>               |              |  |
| Danzig, 100 brls.             | £55          |  |
| Lisbon, 81,352 galls.         | 905          |  |
| New York, 500                 | 219          |  |
| <b>Creosote Oil</b>           |              |  |
| Boston, 99 brls.              | £60          |  |
| <b>Naphthalene</b>            |              |  |
| New York, 86 cks.             | £90          |  |
| Treport, 85                   |              |  |
| Hamburg, 18 500               | 400          |  |
| Christiania, 1 cs.            | 13           |  |
| <b>Pitch</b>                  |              |  |
| Hochfeld, 300 t.              | £555         |  |
| Bombay, 50 brls.              | 23           |  |
| Auckland, 10                  | —            |  |
| Alexandria, 520               | 160          |  |
| Boston, 375                   | 220          |  |
| Dunkirk, 1,690                | 3,030        |  |
| <b>Pyridine Bases</b>         |              |  |
| Amsterdam, 5 drs.             | £115         |  |
| <b>Tar</b>                    |              |  |
| New York, 450 brls.           | £201         |  |
| Tegal, 20 cks.                | 11           |  |
| Sourabaya, 75                 | 39           |  |
| Auckland, 15                  | —            |  |
| Gothenburg, 60 runs.          | 50           |  |
| <b>Copper Sulphate—</b>       |              |  |
| Paris, 20 t.                  | £380         |  |
| Barbadoes, 1                  | 16           |  |
| Bordeaux, 50                  | 9.0          |  |
| Oporto, 6 16 c                | 101          |  |
| Porto Alegre, 1 2             | 17           |  |
| Marseilles, 93 5              | 1758         |  |
| <b>Cream of Tartar—</b>       |              |  |
| Sydney, 1 t. 13 c. 20 kgs.    | 284          |  |
| <b>Disinfectants—</b>         |              |  |
| Algoa Bay, 12 pks.            | £22          |  |
| Penang, 10 cks.               | 300 drs. 140 |  |
| Hamburg, 11 t. 10 c.          | 50 cs. 500   |  |
| Sydney, 1                     | 3            |  |
| Cape Town, 2 2                | 18           |  |
| Singapore, 10 drs.            | 18           |  |
| <b>Guano—</b>                 |              |  |
| Mauritius, 25 t.              | £110         |  |
| <b>Hydrofluoric Acid—</b>     |              |  |
| E. London, 6 cs.              | £30          |  |
| <b>Manure—</b>                |              |  |
| Mauritius, 30 t.              | £350         |  |
| Bordeaux, 25                  | 75           |  |
| Hamburg, 15                   | 45           |  |
| Trinidad, 25                  | 269          |  |
| Martinique, 25                | 60           |  |
| Jersey, 68                    | 140          |  |
| Vancouver, 8 18 c.            | 70           |  |
| Limón, 10                     | 110          |  |
| Havre, 35                     | 100          |  |
| <b>Oxalic Acid—</b>           |              |  |
| Brisbane, 1 t. 8 c.           | £46          |  |
| <b>Oxygen—</b>                |              |  |
| Genoa, 1 cs.                  | £30          |  |
| <b>Phosphorus—</b>            |              |  |
| Melbourne, 2 cs.              | £20          |  |
| Wellington, 2                 | 20           |  |
| <b>Potash—</b>                |              |  |
| Sydney, 1 t. 2 c.             | £18          |  |
| <b>Potash Crystals—</b>       |              |  |
| New York, 2 cs.               | £50          |  |
| Bombay, 3 cks.                | 25           |  |
| <b>Potash Salts—</b>          |              |  |
| Madras, 6 t. 5 c.             | £520         |  |
| <b>Potassium Bicarbonate—</b> |              |  |
| Yokohama, 10 c.               | £14          |  |
| <b>Potassium Bichromate—</b>  |              |  |
| Calcutta, 4 cks.              | £48          |  |
| <b>Potassium Chloride—</b>    |              |  |
| Colombo, 22 t. 10 c.          | £165         |  |
| <b>Potassium Cyanide—</b>     |              |  |
| Melbourne, 25 cs.             | £334         |  |
| Algoa Bay, 5 t. 2 c.          | 666          |  |
| <b>Potassium Prussiate—</b>   |              |  |
| New York, 10 cks.             | £195         |  |
| <b>Saltpetre—</b>             |              |  |
| Santos, 12 t. 18 c.           | £307         |  |
| Melbourne, 3                  | 69           |  |
| Oporto, 2 5                   | 46           |  |
| Sydney, 1                     | 23           |  |
| Bahia, 1 5                    | 30           |  |
| Limón, 10                     | 12           |  |
| <b>Sheep Dip—</b>             |              |  |
| Cape Town, 600 dms.           | £122         |  |
| E. London, 250 drs.           | 48           |  |
| Calcutta, 2 cks.              | 10           |  |
| Punta Arenas, 500 cs.         | 1,000        |  |
| <b>Soda—</b>                  |              |  |
| Singapore, 2 t. 10 c.         | £13          |  |
| <b>Soda Alkali—</b>           |              |  |
| Cape Town, 1 t. 7 c.          | £11          |  |
| <b>Soda Ash—</b>              |              |  |
| Bahia, 2 t. 2 c.              | £15          |  |
| Rio de Janeiro, 35 8          | 159          |  |

**Soda Crystals—**

|                            |      |
|----------------------------|------|
| Adelaide, 5 t. 4 c.        | £13  |
| <b>Sodium Blearbonate—</b> |      |
| Algoa Bay, 2 t. 1 c.       | £14  |
| <b>Sodium Tartrate—</b>    |      |
| Toronto, 17 c.             | £58  |
| <b>Sulphur—</b>            |      |
| E. London, 2 t. 15 c.      | £30  |
| Algoa Bay, 13 4 150 kgs    | 63   |
| Madaira, 13 4              | 120  |
| <b>Sulphuric Acid—</b>     |      |
| Algoa Bay, 10 cs.          | £11  |
| Penang, 1 t. 18 c.         | 18   |
| Aden, 1 3                  | 13   |
| <b>Superphosphates—</b>    |      |
| Madras, 10 t.              | £50  |
| Mauritius, 50              | 200  |
| Bordeaux, 24 17 c.         | 70   |
| <b>Tartaric Acid—</b>      |      |
| Sydney, 1 t.               | £131 |
| Adelaide, 10 c.            | 66   |
| Brisbane, 6                | 103  |

**LIVERPOOL.**

Week ending March 18th.

|                               |     |  |
|-------------------------------|-----|--|
| <b>Acetic Acid—</b>           |     |  |
| Lisbon, 2 t. 15 c. 1 q.       | £20 |  |
| <b>Albumen—</b>               |     |  |
| Rio de Janeiro, 8 c.          | £45 |  |
| <b>Alum—</b>                  |     |  |
| Adelaide, 10 c.               | £3  |  |
| Oporto, 5 t. 2 q.             | 28  |  |
| Lisbon, 5 5                   | 26  |  |
| Havana, 5                     | 20  |  |
| Sydney, 2 10                  | 12  |  |
| Galatz, 13 7 9                | 72  |  |
| Guayaquil, 2 19 3             | 14  |  |
| <b>Alumina Sulphate—</b>      |     |  |
| Portland, M., 1 t.            | £6  |  |
| <b>Alumina Sulphocyanide—</b> |     |  |
| Rio de Janeiro, 4 c.          | £11 |  |
| <b>Ammonia—</b>               |     |  |
| Rio de Janeiro, 3 c. 3 q.     | £5  |  |
| <b>Ammonium Anhydrous—</b>    |     |  |
| Sydney, 2 t. 1 c.             | £10 |  |
| Brisbane, 2 1                 | 10  |  |
| Malta, 5                      | 40  |  |
| <b>Ammonium Carbonate—</b>    |     |  |
| St. John, N.B., 17 c.         | £25 |  |
| Toronto, 1 t. 8 2 q.          | 42  |  |
| Montreal, 2 6 2               | 68  |  |
| Paris, 8                      | 17  |  |
| Hamburg, 7                    | 12  |  |
| <b>Ammonium Chloride—</b>     |     |  |
| Valencia, 1 t.                | £23 |  |
| Alexandria, 2                 | 74  |  |
| Kurrachee, 2 15 c.            | 27  |  |
| Genoa, 2 2                    | 37  |  |
| Ancona, 2 9                   | 9   |  |
| Naples, 1                     | 37  |  |
| Calcutta, 8 5                 | 290 |  |
| Galatz, 1 2                   | 43  |  |
| Barcelona, 1 1                | 24  |  |
| Antwerp, 1 6                  | 37  |  |
| Stettin, 14                   | 16  |  |
| <b>Ammonium Sulphate—</b>     |     |  |
| Cape Palmas, 10 t.            | £88 |  |
| Cartagena, 10 8 c. 1 q.       | 88  |  |
| Valencia, 241 4 2 2,064       |     |  |
| Dunkirk, 60 19                | 220 |  |
| Genoa, 40 13 3                | 349 |  |
| Nantes, 20 11                 | 170 |  |
| New York, 49 10               | 433 |  |
| Genoa, 14 5                   | 127 |  |
| Cartagena(Spn.), 10           | 88  |  |
| Sierra Leone, 10              | 85  |  |
| Rouen, 40 1 4                 | 340 |  |
| Las Palmas, 20 7 2            | 175 |  |
| Genoa, 51 13 2                | 115 |  |
| Demerara, 74 12 5             | 654 |  |
| Cullera, 78                   | 662 |  |
| Antwerp, 25 8 1               | 215 |  |
| Bordeaux, 4 19 2              | 42  |  |
| Palermo, 25 7 1               | 215 |  |
| Barcelona, 23                 | 160 |  |
| <b>Arsenic—</b>               |     |  |
| Singapore, 8 c.               | £9  |  |
| <b>Bleaching Powder—</b>      |     |  |
| Baltimore, 148 cks.           |     |  |
| Bombay, 16 cs. 15 bxs.        |     |  |
| Bordeaux, 15                  |     |  |
| Boston, 561                   |     |  |
| Cape Town, 40                 |     |  |
| Genoa, 277                    |     |  |
| Leghorn, 30                   |     |  |
| Lisbon, 20                    |     |  |
| Maranham, 6                   |     |  |
| Montreal, 19                  |     |  |
| Naples, 94                    |     |  |

|                                           |                |  |
|-------------------------------------------|----------------|--|
| Newport News, 80                          |                |  |
| New York, 123                             |                |  |
| Oporto, 18                                |                |  |
| Philadelphia, 199                         |                |  |
| Portland, M., 10                          |                |  |
| Rio de Janeiro, 7 brls.                   |                |  |
| Vera Cruz, 13                             |                |  |
| <b>Boric Acid—</b>                        |                |  |
| Hiogo, 2 t.                               | £47            |  |
| Hamburg, 1 14 c. 1 q.                     | 50             |  |
| Antwerp, 4 2                              | 8              |  |
| Adelaide, 5 2                             | 6              |  |
| <b>Borax—</b>                             |                |  |
| Tampico, 1 t.                             | £20            |  |
| Adelaide, 1                               | 23             |  |
| Hamburg, 5 13 c.                          | 112            |  |
| Vera Cruz, 5 1 q.                         | 6              |  |
| Genoa, 1 3 3                              | 24             |  |
| Antwerp, 5 9                              | 112            |  |
| Sydney, 1                                 | 33             |  |
| Rotterdam, 21 13                          | 429            |  |
| Melbourne, 3                              | 65             |  |
| Piræus, 6 2                               | 7              |  |
| <b>Calcium Chloride—</b>                  |                |  |
| Hong Kong, 3 t. 3 c.                      | £7             |  |
| <b>Carbolic Acid—</b>                     |                |  |
| Hamburg, 9 t. 14 c.                       | £497           |  |
| Leghorn, 10                               | 41             |  |
| Penang, 13 2 q.                           | 7              |  |
| New York, 10 cks.                         | 80             |  |
| Rio de Janeiro, 2 5 3                     | 59             |  |
| <b>Caustic Potash—</b>                    |                |  |
| Adelaide, 1 t.                            | £26            |  |
| <b>Caustic Soda—</b>                      |                |  |
| Adelaide, 1 brl. 5 bxs. 6 pks.            |                |  |
| Alexandria, 22 dms.                       |                |  |
| Ancona, 30                                |                |  |
| Baltimore, 300                            |                |  |
| Barbadoes, 18                             |                |  |
| Barcelona, 10 cks. 31                     | 500 bxs.       |  |
| Boston, 20 brls.                          |                |  |
| Cartagena(Spn.), 81                       |                |  |
| Catania, 17                               |                |  |
| Ceara, 15                                 |                |  |
| Corunna, 20 brls.                         |                |  |
| Fairwater, 35                             |                |  |
| Fiume, 25                                 |                |  |
| Genoa, 181                                |                |  |
| Hamburg, 43                               |                |  |
| Konigsberg, 18                            |                |  |
| La Guayra, 12                             |                |  |
| Leghorn, 28                               |                |  |
| Lisbon, 95                                |                |  |
| Malaga, 198                               | 4              |  |
| Malta, 11                                 |                |  |
| Marseilles, 15                            |                |  |
| Melbourne, 75                             | 20 kgs 25 bxs. |  |
| Monterey, 70                              |                |  |
| M. Video, 10                              |                |  |
| Naples, 18                                |                |  |
| New Fairwater, 100                        |                |  |
| Newport News, 30                          |                |  |
| Oporto, 110                               |                |  |
| Palermo, 10                               |                |  |
| Para, 20                                  |                |  |
| Paris, 75                                 |                |  |
| Pernambuco, 75                            |                |  |
| Philadelphia, 25                          | 25 bxs.        |  |
| Port Natal, 16                            |                |  |
| St. Domingo, 13                           |                |  |
| San Louis, 15                             |                |  |
| Samarang, 190                             |                |  |
| Seville, 50                               | 50 brls.       |  |
| Sourabaya, 190                            |                |  |
| Sydney, 88                                |                |  |
| Tampico, 60                               |                |  |
| Trieste, 10                               |                |  |
| Valparaiso, 100                           |                |  |
| Venice, 5                                 |                |  |
| Vera Cruz, 17                             |                |  |
| <b>Chemicals (otherwise unclassified)</b> |                |  |
| B. Ayres, 54 t. 3 c.                      | £275           |  |
| Hamburg, 15                               | 25             |  |
| Rotterdam, 1                              | 33             |  |
| New York, 14 9                            | 460            |  |
| Calcutta, 1 10                            | 57             |  |
| Yokohama, 3                               | 60             |  |
| <b>China Clay—</b>                        |                |  |
| Barcelona, 10 t.                          |                |  |
| Boston, 30                                |                |  |
| Lisbon, 30 6 c.                           |                |  |
| Maranham, 3                               | 6              |  |
| Philadelphia, 298                         |                |  |
| <b>Coal Products—</b>                     |                |  |
| <b>Alizarine</b>                          |                |  |
| Santos, 6 cks.                            |                |  |
| Sydney, 2                                 |                |  |
| <b>Aniline Colours</b>                    |                |  |
| Calcutta, 1 cs.                           |                |  |
| <b>Aniline Salt</b>                       |                |  |
| Boston, 42 cks. 8 dms.                    |                |  |
| Portland, M., 20 cs.                      |                |  |

|                                               |       |  |
|-----------------------------------------------|-------|--|
| <b>Creosote</b>                               |       |  |
| Rangoon, 65 cks.                              |       |  |
| <b>Creosote Salts</b>                         |       |  |
| Philadelphia, 305 bgs.                        |       |  |
| <b>Pitch</b>                                  |       |  |
| Port De Boue, 1,250 t.                        |       |  |
| Cette, 140                                    |       |  |
| Valparaiso, 30 brls.                          |       |  |
| <b>Tar</b>                                    |       |  |
| Colombo, 10 brls.                             |       |  |
| Galatz, 20 20 cks.                            |       |  |
| Guayaquil, 100 dms.                           |       |  |
| Ibrail, 20                                    |       |  |
| Lagos, 20                                     |       |  |
| Mossamedes, 33                                |       |  |
| Philadelphia, 150                             |       |  |
| Singapore, 50 mlt.                            |       |  |
| <b>Tar Salts</b>                              |       |  |
| Boston, 9 cks.                                |       |  |
| <b>Coal Products (otherwise unclassified)</b> |       |  |
| New York, 40 cs.                              |       |  |
| <b>Copper Sulphate—</b>                       |       |  |
| Palermo, 6 t. 1 c. 3 q.                       | £112  |  |
| Seville, 6 2 3                                | 97    |  |
| Charente, 65 5 3                              | 1,089 |  |
| Brindisi, 12 19                               | 214   |  |
| Catania, 2 9 1                                | 37    |  |
| Ancona, 13 15 2                               | 203   |  |
| Naples, 55 6 8                                | 882   |  |
| Venice, 238 1 3                               | 3,688 |  |
| Genoa, 202 10 8                               | 3,318 |  |
| Leghorn, 165 8 8                              | 2,700 |  |
| Bordeaux, 520 7 8                             | 8,032 |  |
| Rouen, 5 1                                    | 78    |  |
| Paris, 129 12                                 | 1,071 |  |
| Oporto, 16 14 3                               | 250   |  |
| Cette, 591 3                                  | 9,975 |  |
| Vigo, 1 17 2                                  | 20    |  |
| Algiers, 4 13                                 | 69    |  |
| Nantes, 61 4 3                                | 908   |  |
| Lisbon, 10 8 3                                | 168   |  |
| Galatz, 2 10 4                                | 45    |  |
| Marseilles, 154 18 1                          | 2,671 |  |
| Antwerp, 1 3                                  | 18    |  |
| La Pallice, 11 6 2                            | 171   |  |
| Barcelona, 8 1                                | 122   |  |
| Bari, 260 19 3                                | 4,092 |  |
| Progresso, 2 19                               | 97    |  |
| Konigsberg, 2 19                              | 97    |  |
| Stettin, 3                                    | 99    |  |
| Copenhagen, 1 10                              | 53    |  |
| <b>Copperas—</b>                              |       |  |
| Varna, 4 t. 17 c.                             | £11   |  |
| San Francisco, 46 7 1 q.                      | 98    |  |
| M. Video, 6 12                                | 11    |  |
| <b>Cream of Tartar—</b>                       |       |  |
| Vera Cruz, 6 c.                               | £34   |  |
| <b>Disinfectants—</b>                         |       |  |
| Bombay, 3 t.                                  | £22   |  |
| <b>Dried Blood—</b>                           |       |  |
| Teneriffe, 21 t. 15 c.                        | £185  |  |
| <b>Gelatine—</b>                              |       |  |
| New York, 5 cks.                              |       |  |
| <b>Guano—</b>                                 |       |  |
| Malaga, 20 t.                                 | £180  |  |
| Madaira, 20 8 q.                              | 138   |  |
| <b>Iron Oxide—</b>                            |       |  |
| New York, 3 t. 8 c. 3 q.                      | £12   |  |
| <b>Lime—</b>                                  |       |  |
| Demerara, 53 t. 18 c. 3 q.                    | £125  |  |
| <b>Magnesium Chloride—</b>                    |       |  |
| Rangoon, 1 t. 18 c.                           | £8    |  |
| Bombay, 2                                     | 5     |  |
| <b>Magnesium Sulphate—</b>                    |       |  |
| Alexandria, 50 kgs.                           |       |  |
| Rio de Janeiro, 100                           |       |  |
| Adelaide, 3 t.                                | £150  |  |
| <b>Manure—</b>                                |       |  |
| Antwerp, 5 t. 8 c. 2 q.                       | £38   |  |
| Havre, 5                                      | 21    |  |
| Teneriffe, 2 3                                | 15    |  |
| Genoa, 49 8                                   | 157   |  |
| Madaira, 53                                   | 57    |  |
| Marseilles, 10                                | 81    |  |
| St. Nazaire, 20 10                            | 131   |  |
| Bordeaux, 45 12 3                             | 384   |  |
| Rocheport, 150 1                              | 403   |  |
| <b>Oxalic Acid—</b>                           |       |  |
| Boston, 3 t. 10 c.                            | £110  |  |
| <b>Paint—</b>                                 |       |  |
| Alexandria, 2 cks.                            |       |  |
| Amsterdam, 4 brls.                            |       |  |
| Bayin, 2                                      |       |  |
| Callao, 15 dms.                               | 7 cs. |  |
| Cartagena, N.G., 2                            |       |  |
| Colon, 20 5                                   |       |  |
| Coronel, 16                                   |       |  |
| Corral, 25                                    |       |  |



|                    |     |          |
|--------------------|-----|----------|
| Demerara,          | 3   | 60 kgs.  |
| Gibraltar,         | 11  |          |
| Halifax,           |     | 10       |
| Hamburg, 21 crts.  |     |          |
| Hong Kong,         |     | 200 dms. |
| Iquique,           |     | 10 cs.   |
| Lima,              | 25  | 10 kgs.  |
| Loando,            |     | 2 brls.  |
| Manaos,            | 8   |          |
| Manilla,           | 120 |          |
| Maranham,          | 6   |          |
| Mollendo,          |     | 17 cs.   |
| M. Video,          | 17  |          |
| Mossamedes,        | 3   |          |
| New York,          | 21  | 2 kgs.   |
| Old Calabar,       |     | 12 dms.  |
| Para,              | 1   |          |
| Rio de Janeiro,    |     | 120      |
| St. John's, N. B., | 10  | 220      |
| San Juan, P. R.,   |     | 20       |
| Santiago de Cuba,  |     |          |
| Talcabano,         | 24  | 72 bxs.  |
| Tampico,           |     | 3 cs.    |
| Trieste,           |     | 30       |
| Valencia,          |     | 2        |
| Valparaiso,        | 8   | 6 20     |
| Vera Cruz,         |     | 3        |

**Painters' Colours—**

|                    |         |                 |
|--------------------|---------|-----------------|
| Alexandria,        |         | 31 kgs. 5 brls. |
| Algoa Bay,         | 1 ck.   |                 |
| Antwerp,           |         | 10              |
| Bombay,            | 3 cs.   |                 |
| Boston,            | 1       |                 |
| Calcutta,          | 4       |                 |
| Cartagena (Spn.),  |         | 2               |
| Coronel,           | 6       |                 |
| Dunkirk,           | 1 cs.   |                 |
| Hamburg,           | 1       | 21 3 dms.       |
| Havana,            | 4 tcs.  |                 |
| Iquique,           | 43 cs.  | 15 pks.         |
| Lisbon,            | 1       | 67 6            |
| Manaos,            | 1       |                 |
| Manilla,           | 18      |                 |
| Melbourne, 23 cs.  | 38      | 1 brl.          |
| M. Video,          | 20      | 15              |
| Pernambuco,        | 10      |                 |
| St. John's, N. B., | 14      |                 |
| St. Thomas, 1 cs.  | 30      |                 |
| San Domingo,       |         | 5               |
| Santos,            | 12 dms. |                 |
| Talcabano,         |         | 13              |
| Trebinzonde,       | 1 cs.   |                 |

**Phosphorus—**

|              |        |      |
|--------------|--------|------|
| Guadalajara, | 10 c.  | £110 |
| Puebla,      | 4      | 44   |
| Hong Kong,   | 15     | 188  |
| Hioho,       | 50 cs. |      |
| Yokohama,    | 15     | 718  |

**Potassium Bichromate—**

|                  |         |     |
|------------------|---------|-----|
| St. John, N. B., | 5 c.    | £12 |
| Copenhagen,      | 5 t. 14 | 213 |
| Smyrna,          | 6       | 254 |

**Potassium Chlorate—**

|             |          |     |
|-------------|----------|-----|
| Cape Town,  | 1 t.     | £39 |
| New York,   | 20       | 730 |
| Hioho,      | 13 15 c. | 436 |
| Genoa,      | 2 10     | 100 |
| Mexico,     | 2        | 76  |
| Oporto,     |          | 7   |
| Barcelona,  | 4 17     | 189 |
| Rotterdam,  | 1 18     | 77  |
| Konigsberg, | 1 5      | 49  |
| Ancona,     | 1 5      | 48  |
| Bari,       | 3 10     | 136 |
| Venice,     |          | 39  |
| Reval,      | 28 10    | 878 |

**Potassium Prussiate—**

|        |        |     |
|--------|--------|-----|
| Rouen, | 4 cks. | £70 |
|--------|--------|-----|

**Salt—**

|                 |       |      |
|-----------------|-------|------|
| Abonnema,       | 15 t. |      |
| Amsterdam,      | 75    |      |
| Antwerp,        | 172   |      |
| Attabo,         | 10    |      |
| Boston,         | 125   |      |
| Cameroon,       | 14    | 6 c. |
| Cape Coast,     | 25    |      |
| Cape Town,      | 10    |      |
| Conakry,        | 4     | 7    |
| Copenhagen,     | 914   |      |
| Demerara,       | 35    | 14   |
| Freemantle,     | 1     | 43   |
| Halifax,        | 10    |      |
| Isles De Los,   | 50    |      |
| Kingston,       | 20    |      |
| Maranham,       | 17    | 17   |
| Melbourne,      | 20    |      |
| N. Orleans,     | 1,670 |      |
| New York,       | 11    | 3    |
| Old Calabar,    |       | 14   |
| Opobo,          | 140   | 15   |
| Para,           | 288   | 8    |
| Portland,       | 63    | 5    |
| Portland, Me.,  | 139   | 10   |
| Pt. Natal,      | 10    |      |
| Rangoon,        | 606   |      |
| Rio de Janeiro, | 6     | 12   |

|                  |     |    |
|------------------|-----|----|
| St. John, N. B., | 453 | 15 |
| Salt Pond,       | 25  |    |
| Sierra Leone,    | 197 | 10 |
| Sydney,          | 810 |    |
| Tabon,           | 10  | 14 |
| Trinidad,        | 35  | 14 |
| Valparaiso,      | 151 | 12 |
| Yokohama,        |     | 3  |

**Salt Cake—**

|            |       |       |      |
|------------|-------|-------|------|
| Antwerp,   | 49 t. | 16 c. | £108 |
| Baltimore, | 367   | 8     | 486  |

**Saltpetre—**

|             |      |      |      |
|-------------|------|------|------|
| Parnahyba,  |      | 7 c. | £8   |
| Maranham,   |      | 13   | 3 q. |
| Para,       | 1 t. | 10   | 36   |
| Las Palmas, | 2    | 9    | 44   |
| Ceara,      | 1    |      | 26   |

**Sheep Dip—**

|           |         |       |      |      |      |
|-----------|---------|-------|------|------|------|
| B. Ayres, | 10 cks. | 20 t. | 3 c. | 2 q. | £550 |
| M. Video, | 5       | 12    |      |      | 125  |

**Soap—**

|                    |         |         |              |
|--------------------|---------|---------|--------------|
| Accra,             |         | 35 bxs. |              |
| Addah,             |         | 20      |              |
| Alexandria,        |         | 1 cs.   |              |
| Algoa Bay,         | 2,735   | 205     | 9 bbls.      |
| Amsterdam,         |         | 10      |              |
| Antwerp,           |         | 1,200   |              |
| Axim,              | 202     |         |              |
| Bakana,            | 250     |         |              |
| Barbadoes,         | 1,445   |         |              |
| Bayin,             | 50      |         |              |
| Bombay,            | 255     | 8       | 9 cks.       |
| Bonny,             | 56      |         |              |
| B. Ayres,          |         | 40      |              |
| Calcutta,          | 20      | 50      | 225 bbls.    |
| Callao,            | 35 dms. |         |              |
| Cape Coast,        | 59      |         |              |
| Cape Town,         | 4,770   | 125     |              |
| Constantinople,    | 45      |         |              |
| Copenhagen,        | 40      |         |              |
| Curaçao,           | 50      |         |              |
| Demerara,          | 3,267   |         |              |
| Domnica,           | 25      |         |              |
| Durban,            | 1 tk.   | 45      | 5            |
| E. London,         | 1,700   | 90      | 5            |
| Iquitos,           | 200     |         |              |
| Kingston,          | 1,900   | 315     |              |
| Kurrachee,         | 1,000   | 67      |              |
| Lagos,             | 100     |         |              |
| Lanzarote,         | 50      |         |              |
| Macassar,          | 500     |         |              |
| Madras,            |         | 55      |              |
| Malta,             | 20      | 67      |              |
| Manaos,            | 370     |         |              |
| Menado,            | 1,000   |         |              |
| Monrovia,          | 150     |         |              |
| Mossel Bay,        | 135     |         |              |
| New York,          | 299     | 65      |              |
| Opobo,             | 56      |         |              |
| Para,              | 100     | 2       |              |
| Penang,            |         | 10      |              |
| Pt. Elizabeth,     | 1,420   | 95      | 44           |
| Portland, Me.,     |         | 80      |              |
| Pt. Natal,         | 870     | 10      |              |
| Pt. Said,          | 15      | 3       | 100 hf.-bxs. |
| Rangoon,           | 1,050   | 9       |              |
| St. Nazaire,       | 50      |         |              |
| St. John's, N. B., | 160     |         |              |
| Salt Pond,         | 212     |         |              |
| Salonica,          | 100     |         |              |
| San Fernando,      | 700     |         |              |
| Sandy Point,       | 20      |         |              |
| Shanghai,          | 5,056   | 500     |              |
| Sherbro,           |         | 25 pks. |              |
| Singapore,         |         | 15      |              |
| Tabon,             | 50      |         |              |
| Trinidad,          | 660     |         |              |
| Trieste,           |         | 5       |              |
| Valparaiso,        | 11      | 2       |              |
| Winnabah,          | 50      |         |              |

**Soda—**

|           |         |  |
|-----------|---------|--|
| Madeira,  | 1 brl.  |  |
| Maranham, | 15 cks. |  |

**Soda Alkali—**

|            |          |  |
|------------|----------|--|
| Genoa,     | 64 brls. |  |
| Singapore, | 35       |  |
| Toronto,   | 35       |  |

**Soda Ash—**

|              |          |        |           |
|--------------|----------|--------|-----------|
| Adelaide,    |          | 8 cks. |           |
| Amsterdam,   | 240 bxs. |        |           |
| Antwerp,     | 200      | 4      |           |
| Baltimore,   | 2,808    | 115    | 266 tcs.  |
| Barcelona,   |          | 18     |           |
| Bari,        | 115 dms. |        |           |
| Boston,      | 1,930    | 191    | 143       |
| Brisbane,    |          | 250    | 200 brls. |
| B. Ayres,    |          |        | 75        |
| Callao,      |          | 39     |           |
| Christiania, |          |        |           |
| Copenhagen,  | 2,000    |        |           |
| Delagoa Bay, |          | 20     |           |
| Genoa,       | 130      |        |           |
| Ghent,       | 120 t.   | 20     | 15        |
| Gothenburg,  | 50       |        |           |

|                 |       |             |
|-----------------|-------|-------------|
| Halifax,        | 200   | 20 tcs.     |
| Hamburg,        |       | 25 20 brls. |
| Kobe,           |       | 400         |
| Macao,          | 20    |             |
| Maranham,       |       | 30          |
| New York,       | 3,424 | 14 47 tcs.  |
| Oporto,         |       | 10 2 brls.  |
| Philadelphia,   | 2,200 | 37 270 tcs. |
| Reval,          | 100   |             |
| Rio de Janeiro, |       | 100         |
| Singapore,      | 150   |             |
| Vera Cruz,      | 50    |             |

**Soda Crystals—**

|               |           |        |
|---------------|-----------|--------|
| Boston,       | 420 brls. |        |
| Cape Town,    |           | 3 cks. |
| Halifax,      | 50 kgs.   |        |
| Lisbon,       | 20 brls.  |        |
| Malta,        |           | 50     |
| Oporto,       | 67        |        |
| Philadelphia, | 420       | 140    |
| Valparaiso,   | 215       |        |

**Soda Oxide—**

|           |        |  |
|-----------|--------|--|
| New York, | 23 cs. |  |
|-----------|--------|--|

**Sodium Bicarbonate—**

|              |          |                |
|--------------|----------|----------------|
| Antwerp,     |          | 20 cks.        |
| Baltimore,   |          | 25             |
| Barcelona,   | 155 kgs. |                |
| Bari,        | 115      |                |
| Batavia,     | 17       |                |
| Bordeaux,    | 197      | 13 pks.        |
| Christiania, | 20       |                |
| E. London,   | 17       |                |
| Freemantle,  | 173      | 50 bgs.        |
| Galatz,      | 60       |                |
| Halifax,     | 95       |                |
| Hamburg,     | 100      | 4 cks. 5 brls. |
| Hioho,       | 50       |                |
| Kingston,    | 50       |                |
| Kurrachee,   | 100      |                |
| Lisbon,      | 20       |                |
| Melbourne,   | 150      | 60 bgs.        |
| Nantes,      |          | 72             |
| Paris,       | 125      | 1              |
| Rotterdam,   | 72       |                |
| Salonica,    | 40       |                |
| Singapore,   |          | 12 cks.        |
| Sourabaya,   | 195      | 1              |
| Sydney,      | 300      | 200 bgs.       |
| Tampico,     |          | 25 10 cks.     |
| Trieste,     |          | 10 bgs.        |
| Vera Cruz,   |          |                |
| Yokohama,    | 1,000    |                |

**Sodium Carbonate—**

|            |          |  |
|------------|----------|--|
| Rotterdam, | 50 brls. |  |
|------------|----------|--|

**Sodium Chlorate—**

|          |         |  |
|----------|---------|--|
| Hamburg, | 32 pks. |  |
| Lisbon,  | 2 cks.  |  |

**Sodium Fluorate—**

|          |          |  |
|----------|----------|--|
| Stettin, | 100 bgs. |  |
|----------|----------|--|

**Sodium Hyposulphite—**

|                |          |  |
|----------------|----------|--|
| San Francisco, | 200 kgs. |  |
|----------------|----------|--|

**Sodium Nitrate—**

|         |       |  |
|---------|-------|--|
| Lisbon, | 1 ck. |  |
|---------|-------|--|

**Sodium Silicate—**

|               |         |         |
|---------------|---------|---------|
| Galatz,       | 5 brls. |         |
| Genoa,        | 7       |         |
| Kingston,     | 10      |         |
| Leghorn,      | 12      |         |
| Oporto,       |         | 16 cks. |
| Philadelphia, | 10      |         |
| Salonica,     | 47      |         |
| Sydney,       |         | 14 dms. |
| Tampico,      |         | 20      |
| Vigo,         | 5       |         |
| Yokohama,     | 7       |         |

**Sodium Sulphate—**

|          |          |  |
|----------|----------|--|
| Leghorn, | 26 brls. |  |
|----------|----------|--|

**Starch—**

|             |         |  |
|-------------|---------|--|
| Copenhagen, | 3 cks.  |  |
| Gothenburg, | 4       |  |
| Maranham,   | 16 bgs. |  |

**Sulphur—**

|                |        |           |     |
|----------------|--------|-----------|-----|
| Maranham,      |        | 9 c. 3 q. | £4  |
| Portland, Me., | 100 t. | 1         | 365 |
| Philadelphia,  | 125    | 2         | 407 |
| Boston,        | 25     | 7         | 814 |

**Sulphuric Acid—**

|                 |       |     |
|-----------------|-------|-----|
| Rio de Janeiro, | 18 c. | £14 |
| Maranham,       | 2 t.  | 5   |

**Superphosphates—**

|           |        |               |
|-----------|--------|---------------|
| Cullera,  | 150 t. | £338          |
| Valencia, | 150    | 1 c. 3 q. 313 |

**Tartaric Acid—**

|             |           |     |
|-------------|-----------|-----|
| Pernambuco, | 2 c. 3 q. | £20 |
|-------------|-----------|-----|

**Varnish—**

|                 |        |       |
|-----------------|--------|-------|
| Demerara,       | 5 cks. |       |
| Iquique,        |        | 1 cs. |
| Lisbon,         | 2      |       |
| Oporto,         |        | 3     |
| Rio de Janeiro, |        | 4     |
| Seville,        |        | 2     |

|                       |         |       |
|-----------------------|---------|-------|
| Sulina,               | 3 brls. |       |
| Valparaiso,           | 10 dms. |       |
| <b>Zinc Chloride—</b> |         |       |
| Bombay,               | 5 t.    |       |
| <b>Zinc Oxide—</b>    |         |       |
| Maccio,               |         | 12 c. |

**MANCHESTER**

Week ending March 18th.

|                                           |            |           |
|-------------------------------------------|------------|-----------|
| <b>Alum—</b>                              |            |           |
| Alexandria,                               | 50 brls.   |           |
| Bushire,                                  | 10         |           |
| <b>Aluminium—</b>                         |            |           |
| Antwerp,                                  | 40 bxs.    |           |
| <b>Ammonium Carbonate—</b>                |            |           |
| Rotterdam,                                | 4 cks.     |           |
| <b>Aniline Colours—</b>                   |            |           |
| Hamburg,                                  | 2 kgs.     |           |
| <b>Aniline Salts—</b>                     |            |           |
| Rotterdam,                                | 2 cks.     |           |
| <b>Benzol—</b>                            |            |           |
| Treport,                                  | 10 cks.    |           |
| <b>Bleaching Powder—</b>                  |            |           |
| Beyrout,                                  | 2 kgs.     |           |
| <b>Carbolic Acid—</b>                     |            |           |
| Beyrout,                                  | 1 brl.     |           |
| <b>Caustic Soda—</b>                      |            |           |
| Tunis,                                    | 22 dms.    |           |
| <b>Chemicals (otherwise undescr.)</b>     |            |           |
| Copenhagen,                               | 1 ck.      |           |
| <b>Coal Products (otherwise undescr.)</b> |            |           |
| Hamburg,                                  | 30 dms.    |           |
| Rotterdam,                                | 49 brls.   |           |
| Treport,                                  | 16 cks.    | 18a bbls. |
| <b>Extracts—</b>                          |            |           |
| Christiania,                              | 5 cks.     |           |
| Rotterdam,                                | 1          |           |
| <b>Ferrous Sulphate—</b>                  |            |           |
| Beyrout,                                  | 1 brl.     |           |
| <b>Glue—</b>                              |            |           |
| Rotterdam,                                | 20 cks.    |           |
| <b>Oxygen—</b>                            |            |           |
| Treport,                                  | 30 cyldrs. |           |
| <b>Paraffin Wax—</b>                      |            |           |
| Hamburg,                                  | 10 cs.     |           |
| <b>Pitch—</b>                             |            |           |
| Cette,                                    | 1,150 t.   |           |
| Sables D'Olonne,                          | 906        |           |
| <b>Soap—</b>                              |            |           |
| Alexandria,                               | 30 bxs.    |           |
| Malta,                                    | 3          |           |
| <b>Soda Crystals—</b>                     |            |           |
| Beyrout,                                  | 1 brl.     |           |
| <b>Sodium Arseniate—</b>                  |            |           |
| Rouen,                                    | 3 cks.     |           |
| <b>Tallow—</b>                            |            |           |
| Rotterdam,                                | 4 cks.     |           |
| <b>Tar Oil—</b>                           |            |           |
| Antwerp,                                  | 10 cks.    | 12 dms.   |
| Hamburg,                                  |            | 2         |
| Rotterdam,                                |            | 25 brls.  |
| Treport,                                  | 26         |           |
| <b>Tar Salts—</b>                         |            |           |
| Hamburg,                                  | 30 cks.    |           |
| Rotterdam,                                | 29 cs.     |           |

**HULL.**

Week ending March 14th.

|                                       |                |
|---------------------------------------|----------------|
| <b>Alkali—</b>                        |                |
| Constantinople,                       | 150 cks.       |
| Libau,                                | 100 kgs.       |
| <b>Ammonium Sulphate—</b>             |                |
| Bordeaux,                             | 115 bgs.       |
| Antwerp,                              | 1,000          |
| Dunkirk,                              | 47             |
| Ghent,                                | 350            |
| Rotterdam,                            | 200            |
| <b>Barium—</b>                        |                |
| New York,                             | 32 cks.        |
| <b>Bleaching Powder—</b>              |                |
| Danzig,                               | 31 cks.        |
| Fiume,                                | 11             |
| Stettin,                              | 82             |
| <b>Carbolic Acid—</b>                 |                |
| Odessa,                               | 25 cks.        |
| <b>Chemicals (otherwise undescr.)</b> |                |
| Antwerp,                              | 10 cks. 10 cs. |
| Bombay,                               | 250            |
| Bergen,                               | 4              |
| Bar,                                  | 10             |



|              |    |             |
|--------------|----|-------------|
| Christiania, | 15 | 1,229 lbs.  |
| Copenhagen,  | 2  |             |
| Danzig,      | 10 | 11 352 pks. |
| Ghent,       | 4  |             |
| Gothenburg,  | 6  | 6           |
| Hango,       | 1  |             |
| Hamburg,     | 2  | 33          |
| Havlingen,   | 1  |             |
| Libau,       | 25 | kgs.        |
| Reval,       | 11 | 3           |
| Rotterdam,   | 55 | 123 350     |
| Stettin,     | 4  |             |
| Trieste,     | 15 |             |
| Venice,      | 5  | 10 9 dms.   |

**Chrome Ore—**

|        |       |
|--------|-------|
| Libau, | 10 t. |
|--------|-------|

**Cottonseed Oil—**

|             |       |
|-------------|-------|
| Bordeaux,   | 45 c. |
| Antwerp,    | 1,324 |
| Amsterdam,  | 801   |
| Bremen,     | 542   |
| Copenhagen, | 104   |
| Danzig,     | 328   |
| Gothenburg, | 100   |
| Hamburg,    | 978   |
| Kuster dje, | 35    |

**Dyestuffs (otherwise undescribed)**

|              |             |
|--------------|-------------|
| Amsterdam,   | 52 cks.     |
| Bremen,      | 6           |
| Christiania, | 42 bgs.     |
| Danzig,      | 1 cs. 1 kg. |
| Hamburg,     | 2           |
| Libau,       | 4           |
| Reval,       | 1           |
| Rotterdam,   | 5           |

**Glue—**

|            |         |
|------------|---------|
| Amsterdam, | 10 bgs. |
| Ghent,     | 2 cks.  |
| Hango,     | 5       |
| New York,  | 45      |

**Linseed Oil—**

|                |       |
|----------------|-------|
| Bombay,        | 60 c. |
| Bergen,        | 66    |
| Christiania,   | 396   |
| Christiansand, | 45    |
| Hamburg,       | 556   |
| Kurrachee,     | 30    |
| Konigsberg,    | 1 ck. |
| Stavanger,     | 42    |
| Rotterdam,     | 70    |

**Manure—**

|         |        |
|---------|--------|
| Venice, | 375 t. |
|---------|--------|

**Ochre—**

|            |         |
|------------|---------|
| Amsterdam, | 13 cks. |
|------------|---------|

**Painters' Colours—**

|                |             |
|----------------|-------------|
| Bordeaux,      | 3 cks.      |
| Amwerp,        | 34 2 cs.    |
| Bombay,        | 50 267 pks. |
| Bergen, 8 dms. | 2 50        |
| Christiania,   | 3 273       |
| Christiansund, | 6           |
| Copenhagen,    | 15 1 1 dm.  |
| Dunkirk,       | 1           |
| Drontheim,     | 30          |
| Ghent,         | 13          |
| Gothenburg,    | 8 1         |
| Hamburg,       | 29 2        |
| New York,      | 11          |
| Odessa,        | 250         |
| Stavanger,     | 50          |
| Rotterdam,     | 13          |
| San Francisco, | 15          |
| Stettin,       | 13 10 pks.  |

**Pitch—**

|              |          |
|--------------|----------|
| Antwerp,     | 266 t.   |
| Christiania, | 26 c.    |
| Dunkirk,     | 167      |
| Odessa,      | 223 cks. |

**Soap—**

|              |        |
|--------------|--------|
| Christiania, | 10 cs. |
| Gothenburg,  | 1      |

**Soda Crystals—**

|       |         |
|-------|---------|
| Bari, | 10 cks. |
|-------|---------|

**Starch—**

|             |         |
|-------------|---------|
| Bergen,     | 10 bgs. |
| Copenhagen, | 70 cs.  |
| Gothenburg, | 16 sks. |

**Tar—**

|             |         |
|-------------|---------|
| Antwerp,    | 23 cks. |
| Amsterdam,  | 5 6 cs. |
| Copenhagen, | 15      |
| Danzig,     | 3       |
| Gothenburg, | 1       |
| Havlingen,  | 1       |
| Rotterdam,  | 2       |

**Treacle—**

|            |         |
|------------|---------|
| Bergen,    | 30 cks. |
| Drontheim, | 25      |
| Hango,     | 4       |

**Turpentine—**

|                |        |
|----------------|--------|
| Christiansund, | 2 cks. |
|----------------|--------|

**Varnish—**

|             |                   |
|-------------|-------------------|
| Antwerp,    | 1 ck. 5 cs. 1 dm. |
| Amsterdam,  | 2                 |
| Copenhagen, | 1 1 1             |
| Dunkirk,    | 1                 |
| Ghent,      | 1                 |
| Gothenburg, | 4                 |
| Hamburg,    | 1                 |
| Harlingen,  | 1                 |
| Rotterdam,  | 2                 |

**GLASGOW.**

Week ending March 19th.

**Albumen—**

|            |     |
|------------|-----|
| New York,  | £70 |
| U.S.A.,    | 256 |
| Melbourne, | 21  |

**Alkali—**

|         |             |
|---------|-------------|
| U.S.A., | 16 t. 12 c. |
|---------|-------------|

**Ammonia—**

|            |          |
|------------|----------|
| Mauritius, | 235 lbs. |
|------------|----------|

**Ammonium Sulphate—**

|            |              |
|------------|--------------|
| Demerara,  | 417 t. 17 c. |
| France,    | 10 2         |
| Mauritius, | 202          |
| Palermo,   | 19 3/4       |
| Samarang,  | 201 16 1/2   |
| Sourabaya, | 44 13        |
| Trinidad,  | 30 12 1/4    |
| Madras,    | 2            |
| Barcelona, | 61 1 1/4     |
| Cullera,   | 395 16 1/2   |
| Malaga,    | 51 5 1/4     |
| Valencia,  | 72 17 1/2    |

**Asbestos—**

|           |     |
|-----------|-----|
| Calcutta, | £50 |
|-----------|-----|

**Benzine—**

|         |     |
|---------|-----|
| France, | £65 |
|---------|-----|

**Bleaching Powder—**

|            |                  |
|------------|------------------|
| Melbourne, | 192 t. 13 1/4 c. |
| U.S.A.,    | 7 11             |

**Borax—**

|            |     |
|------------|-----|
| Melbourne, | £42 |
|------------|-----|

**Carbolic Acid—**

|            |      |
|------------|------|
| Rotterdam, | 6 t. |
|------------|------|

**Castor Oil—**

|           |     |
|-----------|-----|
| Adelaide, | £96 |
|-----------|-----|

**Caustic Soda—**

|          |            |
|----------|------------|
| Seville, | 10 t. 5 c. |
|----------|------------|

**Cod Oil—**

|            |      |
|------------|------|
| Melbourne, | £135 |
|------------|------|

**Cottonseed Oil—**

|           |               |
|-----------|---------------|
| Demerara, | 1 t. 4 1/4 c. |
|-----------|---------------|

**Coal Products—**

|          |      |
|----------|------|
| Creosote | £690 |
|----------|------|

**Creosote Oil**

|         |      |
|---------|------|
| France, | £500 |
|---------|------|

**Hamburg,**

|           |       |
|-----------|-------|
| New York, | 72 t. |
|-----------|-------|

**U.S.A.,**

|       |     |
|-------|-----|
| Pitch | 240 |
|-------|-----|

**Mauritius,**

|          |     |
|----------|-----|
| Palermo, | 194 |
|----------|-----|

**Amsterdam,**

|         |     |
|---------|-----|
| U.S.A., | £45 |
|---------|-----|

**France,**

|         |    |
|---------|----|
| Russia, | 20 |
|---------|----|

**Ancona,**

|     |     |
|-----|-----|
| Tar | 665 |
|-----|-----|

**Hamburg,**

|         |     |
|---------|-----|
| Russia, | 500 |
|---------|-----|

**Ode-sa,**

|                                  |     |
|----------------------------------|-----|
| Goil Products (otherwise undes.) | 456 |
|----------------------------------|-----|

**Dextrine—**

|            |       |
|------------|-------|
| Melbourne, | 1,960 |
|------------|-------|

**Dyestuffs (otherwise undes.)—**

|            |        |
|------------|--------|
| Rotterdam, | £1,355 |
|------------|--------|

**Extracts—**

|            |     |
|------------|-----|
| Barcelona, | £41 |
|------------|-----|

**Gelatine—**

|         |     |
|---------|-----|
| U.S.A., | £84 |
|---------|-----|

**Lead Nitrate—**

|         |     |
|---------|-----|
| U.S.A., | £68 |
|---------|-----|

**Linseed Oil—**

|            |    |
|------------|----|
| Algoa Bay, | 73 |
|------------|----|

**Melbourne,**

|        |            |
|--------|------------|
| Bahia, | 1 t. 15 c. |
|--------|------------|

**B. C. Africa,**

|         |         |
|---------|---------|
| Canada, | 2 1 1/2 |
|---------|---------|

**Chinde,**

|            |      |
|------------|------|
| E. London, | 9 15 |
|------------|------|

**Logwood—**

|         |      |
|---------|------|
| Canada, | 3 16 |
|---------|------|

**Paris,**

|        |       |
|--------|-------|
| Rouen, | 1 1/2 |
|--------|-------|

**Magnesium Sulphate—**

|                 |           |
|-----------------|-----------|
| Rio de Janeiro, | £36. 1cs. |
| St Stephen,     | £24       |
| N.B.,           | 10        |

**Manure—**

|           |           |
|-----------|-----------|
| Trinidad, | 16 1/2 c. |
|-----------|-----------|

**Ochre—**

|         |     |
|---------|-----|
| Canada, | £43 |
|---------|-----|

**Paint—**

|        |     |
|--------|-----|
| Bahia, | £50 |
|--------|-----|

**Painters' Colours—**

|            |     |
|------------|-----|
| Algoa Bay, | £40 |
| Melbourne, | 580 |
| Calcutta,  | 149 |
| Adelaide,  | 190 |
| Durban,    | 20  |
| Sydney,    | 280 |

**Paraffin Wax—**

|            |       |
|------------|-------|
| Genoa,     | £108  |
| Russia,    | 1,012 |
| Turkey,    | 164   |
| Barcelona, | 366   |
| Bilbao,    | 50    |

**Phosphate—**

|           |       |
|-----------|-------|
| Trinidad, | 11 c. |
|-----------|-------|

**Potash Salts—**

|             |      |
|-------------|------|
| Valparaiso, | £350 |
|-------------|------|

**Potassium Bichromate—**

|         |      |
|---------|------|
| Bilbao, | £226 |
|---------|------|

**Genoa,**

|         |     |
|---------|-----|
| U.S.A., | 357 |
|---------|-----|

**Barcelona,**

|         |       |
|---------|-------|
| Canada, | 14 t. |
|---------|-------|

**Victoria,**

|            |       |
|------------|-------|
| Rotterdam, | 1,209 |
|------------|-------|

**Potassium Prussiate—**

|            |                |
|------------|----------------|
| Barcelona, | 6 t. 10 1/2 c. |
|------------|----------------|

**New York,**

|                     |          |
|---------------------|----------|
| Potassium Sulphate— | 4 17 1/2 |
|---------------------|----------|

**Potassium Sulphide—**

|            |                |
|------------|----------------|
| Mauritius, | 30 t. 6 1/4 c. |
|------------|----------------|

**Sydney,**

|            |      |
|------------|------|
| Rotterdam, | 5 t. |
|------------|------|

**Rosin Oil—**

|            |     |
|------------|-----|
| Rotterdam, | £24 |
|------------|-----|

**Salt—**

|         |           |
|---------|-----------|
| Sydney, | 12 1/4 c. |
|---------|-----------|

**Soap—**

|               |            |
|---------------|------------|
| B. C. Africa, | 13 t. 6 c. |
|---------------|------------|

**Jamaica,**

|                    |     |
|--------------------|-----|
| Sodium Bichromate— | 2 7 |
|--------------------|-----|

**Genoa,**

|            |                |
|------------|----------------|
| Barcelona, | 11 t. 5 1/2 c. |
|------------|----------------|

**Canada,**

|          |          |
|----------|----------|
| Sulphur— | 22 4 1/2 |
|----------|----------|

**Trinidad,**

|                 |        |
|-----------------|--------|
| Sulphuric Acid— | 18 1/2 |
|-----------------|--------|

**Demerara,**

|         |               |
|---------|---------------|
| Tallow— | 5 t. 3 1/2 c. |
|---------|---------------|

**Rotterdam,**

|          |            |
|----------|------------|
| Treacle— | 15 t. 3 c. |
|----------|------------|

**Cape Town,**

|              |            |
|--------------|------------|
| Christiania, | 15 t. 3 c. |
|--------------|------------|

**TYNE.**

Week ending March 14th.

**Alkali—**

|          |            |
|----------|------------|
| Antwerp, | 10 t. 3 c. |
|----------|------------|

**Hamburg,**

|          |     |
|----------|-----|
| Leghorn, | 5 2 |
|----------|-----|

**Rotterdam,**

|                    |     |
|--------------------|-----|
| Ammonium Sulphate— | 1 3 |
|--------------------|-----|

**Valencia,**

|             |        |
|-------------|--------|
| Anthracene— | 120 t. |
|-------------|--------|

**Rotterdam,**

|           |             |
|-----------|-------------|
| Antimony— | 77 t. 13 c. |
|-----------|-------------|

**Hamburg,**

|           |      |
|-----------|------|
| Asbestos— | 3 t. |
|-----------|------|

**Bariun—**

|        |      |
|--------|------|
| Rouen, | 2 c. |
|--------|------|

**Barium Carbonate—**

|        |            |
|--------|------------|
| Libau, | 10 t. 5 c. |
|--------|------------|

**Barytes—**

|        |      |
|--------|------|
| Rouen, | 1 t. |
|--------|------|

**Bleaching Powder—**

|          |            |
|----------|------------|
| Antwerp, | 40 t. 3 c. |
|----------|------------|

**Hamburg,**

|        |    |
|--------|----|
| Libon, | 19 |
|--------|----|

**Odense,**

|             |     |
|-------------|-----|
| Copenhagen, | 6 2 |
|-------------|-----|

**Libau,**

|            |      |
|------------|------|
| Rotterdam, | 10 2 |
|------------|------|

**Drontheim,**

|         |    |
|---------|----|
| Oporto, | 35 |
|---------|----|

**Gothenburg,**

|             |      |
|-------------|------|
| Gothenburg, | 14 5 |
|-------------|------|

**Caustic Soda—**

|             |            |
|-------------|------------|
| Valencia,   | 10 8       |
| Antwerp,    | 14 19      |
| Hamburg,    | 03 2       |
| Copenhagen, | 23 t. 1 c. |
| Malmo,      | 6 4        |
| Genoa,      | 40         |
| Barcelona,  | 1          |
| Gothenburg, | 3          |
| Gothenburg, | 67         |
| Gothenburg, | 14         |

**Farina—**

|          |      |
|----------|------|
| Leghorn, | 4 t. |
|----------|------|

**Magnesia—**

|         |       |
|---------|-------|
| Odessa, | 10 c. |
|---------|-------|

**Manganese—**

|         |             |
|---------|-------------|
| Bilbao, | 52 t. 12 c. |
|---------|-------------|

**Manure—**

|           |        |
|-----------|--------|
| Valencia, | 279 t. |
|-----------|--------|



## PRICES CURRENT.

WEDNESDAY, MARCH 25TH

PREPARED BY MESSRS. HIGGINBOTTOM AND CO., 116, PORTLAND STREET, MANCHESTER.

The values stated are F.O.R. at maker's works, or at usual ports of shipment in U.K. The price in different localities may

| Acids:—                                    |               | £ s. d. |         |                                                              |
|--------------------------------------------|---------------|---------|---------|--------------------------------------------------------------|
| Acetic, 25 % and 40 % .. .. .              | per cwt.      | 6/      | & 9/-   | Lime, Acetate (brown) (ex ship) .. .. . per ton              |
| Glacial .. .. .                            | "             | 40/-    |         | " (grey) (ex ship) .. .. . "                                 |
| Arsenic S.G., 2000° .. .. .                | "             | 1       | 2 0     | Magnesium (ribbon and wire) .. .. . per oz.                  |
| Fluoric .. .. .                            | per lb.       | 0 0     | 3 1/4   | " Chloride (ex ship) .. .. . per ton                         |
| Muriatic (Tower Salts), 30° Tw. .. .. .    | per bottle    | 0 0     | 10      | " Carbonate .. .. . per cwt.                                 |
| (Cylinder), 30° Tw. .. .. .                | "             | 0 3     | 0       | " Hydrate .. .. . per ton                                    |
| Nitric 80° Tw. .. .. .                     | per lb.       | 0 0     | 1 1/2   | " Sulphate (Epsom Salts) .. .. . per ton                     |
| Nitrous .. .. .                            | "             | 0 0     | 1 1/4   | Manganese, Sulphate .. .. . "                                |
| Oxalic .. .. .                             | nett          | 0 0     | 3 1/2   | " Borate .. .. . per cwt.                                    |
| Phosphoric, 1750° .. .. .                  | "             | 0 1     | 0       | " Ore, 70 % .. .. . per ton                                  |
| Picric .. .. .                             | "             | 0 0     | 11      | Methylated Spirit, 61° O.P. .. .. . per gallon               |
| Sulphuric (fuming 50 %) .. .. .            | per ton       | 15      | 10 0    | Naphtha (Wood), Solvent .. .. . "                            |
| " (monohydrate) .. .. .                    | "             | 5       | 10 0    | " Miscible, 60° O.P. .. .. . "                               |
| " (Pyrites, 168°) .. .. .                  | "             | 3       | 0 0     | Oils:—                                                       |
| " 150° .. .. .                             | "             | 1       | 5 0     | Cotton-seed .. .. . per ton                                  |
| " (free from arsenic, 145°) .. .. .        | "             | 1       | 7 6     | Linseed .. .. . "                                            |
| Sulphurous (solution) S.G. 1025 .. .. .    | "             | 3       | 0 0     | Petroleum, American .. .. . per gallon                       |
| Tannic (pure) .. .. .                      | per lb.       | 0 1     | 2       | Stearine .. .. . per ton                                     |
| Tartaric .. .. .                           | "             | 0 1     | 2 1/2   | Phosphorus (yellow) .. .. . per lb.                          |
| Arsenic, white powdered .. .. .            | nett          | 25      | 0 0     | " (red) .. .. . "                                            |
| Alum (loose lump) .. .. .                  | "             | 4       | 12 6    | Potassium (metal) .. .. . per oz.                            |
| Alumina Sulphate (pure) .. .. .            | "             | 4       | 12 6    | " Bichromate .. .. . nett per lb.                            |
| Aluminoferic .. .. .                       | "             | 2       | 7 6     | " Carbonate, 90% (ex ship) .. .. . per ton                   |
| Aluminium .. .. .                          | per lb.       | 0 2     | 10      | " Chlorate .. .. . per lb.                                   |
| Ammonia, Anhydrous .. .. .                 | "             | 0 1     | 3       | " Cyanide, 98% .. .. . "                                     |
| " 880=28° B. .. .. .                       | per lb.       | 0 0     | 2 1/4   | " Hydrate (Caustic Potash) 90% .. .. . per ton               |
| " =24° B. .. .. .                          | "             | 0 0     | 1 1/4   | " (Caustic Potash) 75/80% .. .. . "                          |
| " Carbonate .. .. .                        | nett          | 0 0     | 3 1/4   | " (Caustic Potash) 70/75% .. .. . "                          |
| " Muriate .. .. .                          | per ton       | 22      | 10 0    | " Nitrate (refined) .. .. . per cwt.                         |
| " (sal-ammoniac) 1st & 2nd .. .. .         | per cwt.      | 39/-    | & 37/-  | " Permanganate .. .. . per cwt.                              |
| " Nitrate .. .. .                          | per ton       | 37      | 10 0    | " Prussiate Yellow .. .. . per lb.                           |
| " Phosphate .. .. .                        | per lb.       | 0 0     | 6 1/4   | " Sulphate, 90 % (ex ship) .. .. . per ton                   |
| " Sulphate (grey) London .. .. .           | per ton       | 8       | 2 6     | " Muriate, 80 % (do.) .. .. . "                              |
| " (grey) Hull .. .. .                      | "             | 8       | 3 9     | Silver (metal) .. .. . per oz.                               |
| Aniline Oil (pure) .. .. .                 | per lb.       | 0 0     | 7 1/4   | " Nitrate .. .. . "                                          |
| Aniline Salt .. .. .                       | "             | 0 0     | 6 1/4   | Sodium (metal) .. .. . per lb.                               |
| Antimony .. .. .                           | per ton       | 30      | 0 0     | " Carb. (refined Soda-ash) 48 % .. .. . nett per ton         |
| " (tartar emetic) .. .. .                  | per lb.       | 0 0     | 8 1/2   | " (Caustic Soda-ash) 48 % .. .. . "                          |
| " (golden sulphide) .. .. .                | "             | 0 0     | 10      | " (Carb. Soda-ash) 48% .. .. . "                             |
| Barium Chloride .. .. .                    | per ton       | 7       | 0 0     | " (Alkali) 58 % .. .. . "                                    |
| " Carbonate (native) .. .. .               | "             | 3       | 10 0    | " (Soda Crystals) .. .. . "                                  |
| " Sulphate (native levigated) .. .. .      | "             | 42/6    | to 65/- | " Acetate (ex-ship) .. .. . "                                |
| Bleaching Powder, 35 % .. .. .             | nett          | 7       | 0 0     | " Arseniate, 45 % .. .. . "                                  |
| " Liquor, 7 % .. .. .                      | "             | 3       | 10 0    | " Chlorate .. .. . per lb.                                   |
| Bisulphide of Carbon .. .. .               | "             | 12      | 10 0    | " Borate (Borax) .. .. . net, per ton                        |
| Chromium Acetate (crystal) .. .. .         | per lb.       | 0 0     | 6       | " Bichromate .. .. . per lb.                                 |
| Calcium Chloride .. .. .                   | per ton       | 2       | 2 6     | " Hydrate (77 % Caustic Soda) (f.o.b.) net pr. ton .. .. . " |
| China Clay (at Runcorn) in bulk .. .. .    | "             | 15/-    | to 30/- | " (74 % Caustic Soda) .. .. . "                              |
| Coal Tar Products and Dyes:—               |               |         |         | " (70 % Caustic Soda) .. .. . "                              |
| Alizarine (artificial) 20 % .. .. .        | nett          | 0 0     | 7 1/4   | " (60 % Caustic Soda) .. .. . "                              |
| Magenta .. .. .                            | "             | 0 3     | 9       | " (60 % Caustic Soda, cream) (f.o.b.) .. .. . "              |
| Anthracene, 30 % A, f.o.b. London .. .. .  | per unit      | 0 0     | 11 1/2  | " Bicarbonate .. .. . "                                      |
| Benzol, 90 % .. .. .                       | per gallon    | 0 2     | 3       | " Hyposulphite .. .. . "                                     |
| 50/90 .. .. .                              | "             | 0 1     | 8       | " Manganate, 30% .. .. . "                                   |
| Carbolic Acid (crystallised 40°) .. .. .   | per lb.       | 0 0     | 8 1/2   | " Nitrate (95 %) ex-ship Liverpool .. .. . per cwt.          |
| " (crude 60°) .. .. .                      | per gallon    | 0 2     | 3       | " Nitrite, 98 % .. .. . per ton                              |
| Creosote (ordinary) .. .. .                | "             | 0 0     | 1 1/4   | " Phosphate .. .. . "                                        |
| " (filtered for Lucigen light) .. .. .     | "             | 0 0     | 1 1/4   | " Silicate (glass) .. .. . per ton                           |
| Crude Naphtha 30 % @ 120° C. .. .. .       | "             | 0 0     | 9       | " (liquid, 100° Tw.) .. .. . "                               |
| Grease Oils, 22° Tw. .. .. .               | per ton       | 2       | 10 0    | " Stannate, 40 % .. .. . per cwt.                            |
| Pitch, f.o.b. Liverpool or Garston .. .. . | "             | 1       | 13 0    | " Sulphate (Salt-cake) .. .. . per ton                       |
| Solvent Naphtha, 90 % at 160° .. .. .      | per gallon    | 0 1     | 4       | " (Glauber's Salts) .. .. . "                                |
| " Lucigen " and " Wells " Oils .. .. .     | "             | 0 0     | 2 1/2   | " Sulphide .. .. . "                                         |
| Copper .. .. .                             | per ton       | 45      | 17 6    | " Sulphite .. .. . "                                         |
| " Sulphate .. .. .                         | "             | 18      | 15 0    | Strontium Hydrate, 100% .. .. . "                            |
| " Oxide (copper scales) .. .. .            | "             | 41      | 10 0    | Sulphocyanide Ammonium, 95 % .. .. . per lb.                 |
| Glycerine (crude) .. .. .                  | "             | 36      | 0 0     | " Barium, 95 % .. .. . "                                     |
| " (distilled S.G. 1250°) .. .. .           | "             | 75      | 0 0     | " Potassium .. .. . "                                        |
| Iodine .. .. .                             | nett, per oz. | 0 0     | 9       | Sulphur (Flowers) .. .. . per ton                            |
| Iron Sulphate (copperas) .. .. .           | per ton       | 1       | 5 0     | " (Roll Brimstone) .. .. . "                                 |
| " Sulphide (antimony slag) .. .. .         | "             | 2       | 0 0     | " Brimstone : Best Quality .. .. . "                         |
| Lead (sheet) for cash .. .. .              | "             | 13      | 0 0     | Superphosphate of Lime (26% .. .. . "                        |
| " Litharge Flake (ex ship) .. .. .         | "             | 14      | 10 0    | Tallow .. .. . "                                             |
| " Acetate (white " ) .. .. .               | "             | 21      | 10 0    | Tin Crystals .. .. . per lb.                                 |
| " brown " ) .. .. .                        | "             | 16      | 0 0     | " English Ingots .. .. . per ton                             |
| " Carbonate: (white lead) pure .. .. .     | "             | 16      | 0 0     | Zinc (Spelter) .. .. . "                                     |
| " Nitrate .. .. .                          | "             | 19      | 0 0     | " Chloride (solution. 100° Tw.) .. .. . "                    |



# THE CHEMICAL TRADE JOURNAL AND OIL, PAINT and COLOUR REVIEW.

Publishing Offices: 32, BLACKFRIARS STREET, MANCHESTER.

No. 463.

SATURDAY, APRIL 4, 1896.

Vol. XVIII.

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## LATE ADVERTISEMENTS.

### TENDER.

COUNTY BOROUGH OF BURY.

TO SULPHURIC ACID MAKERS.

THE Gas Committee of the Bury Corporation are prepared to receive TENDERS for the supply of about 350 tons of Sulphuric Acid for the Manufacture of Sulphate of Ammonia, for a period of One Year, from 1st May, 1896.

Forms of Tender and conditions may be obtained on application to Mr. W. H. S. GERRARD, Engineer and Manager, Gas Works, Elton, Bury. Sealed Tenders, endorsed "Tender for Acid," to be sent to me, the undersigned, on or before Monday, April 20, 1896. Preference will be given to those persons or firms who pay to their workpeople the regular standard rate of wages obtaining at the time in the town or district.

JOHN HASLAM, Town Clerk.

Corporation Offices, Bury, April 1, 1896.

**CHEMICAL WORKS**—Wanted, by elderly Person, who has had many years experience in Sulphuric, Nitric, and other Acids. Situation in same; satisfactory references.—Address "Acids," *Chemical Trade Journal* Office, Manchester.

## Notices.

All communications for the *Chemical Trade Journal* should be addressed, and Cheques and Post Office Orders made payable to—

**DAVIS BROS., 32, Blackfriars Street, MANCHESTER.**

Our Registered Telegraphic Address is—

"Expert, Manchester."

NATIONAL TELEPHONE 3060.

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Each additional 10 words ..... 6s. 6d.

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10 Words and under ..... 1s. 6d. per insertion.

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## CURRENT TOPICS.

### THE PROGRESS OF RIVER PURIFICATION.

THIS week an interesting report of the work done by the Mersey and Irwell Joint Committee has been made public. On the whole the figures given in this report show a substantial advance upon last year even, and a very marked alteration since the day the Committee first began its labours.

A consideration of the report on broad lines would seem to indicate that the only unsatisfactory progress that has been made has been with local authorities. Manufacturers on all sides are shown by the report to have done more to stop pollution, at great personal expense, than any of the other polluters. This fact was also directly testified by the chairman in his remarks on the report.

Such a state of affairs is as pleasing as it is commendable, and only further emphasises the truth of our contention that ever since the formation of the Committee there has been a tendency to attach too much importance to the enormity of manufacturers' pollution in comparison with that from inefficiently treated sewage. From the present report we now see that had local and sanitary authorities met the Committee as fairly and honestly in their endeavours as it is proved manufacturers have, the rivers instead of showing an improvement that needs some looking for, would have been obviously and manifestly purer. No doubt now the extreme importance of using exceptional pressure to force on the work of authorities will be recognised and acted upon by the Committee. Much of the loss of time is undoubtedly due to the fact that authorities, unlike manufacturers, have practically no personality, and therefore cannot be coerced to the same extent.

When the business before the Committee was concluded Sir Henry Roscoe was called in and advised that he had been reappointed at an inclusive salary of £725. for the ensuing year. As this decision was the outcome of the investigation by the General Purposes Committee of the questions specially referred back to them, we presume the members of that Committee succeeded in fully satisfying themselves that the services of Sir Henry and his lieutenant had been entirely devoted to the furtherance of the Committee's work, and not divided between the latter and those the Committee had to supervise. At the same time it would appear that this same Committee was equally convinced that the special services that entailed the extra £100. had been specially serviceable. In thanking the Committee, Sir Henry "expressed a hope that he would be able to be of some assistance in the future"—a hope in which we fervently join.

### THE METRIC SYSTEM.

Progress is steadily being made towards the attainment of the ultimate introduction of this system of weights and measures.



The recommendations of the Parliamentary Committee were perhaps somewhat too drastic, as there is nothing goes so much against the grain of the British public as an attempt to enforce changes by compulsion, instead of suasion.

To make an entire change compulsory at the end of two years might, and most likely would, have entailed the infliction of hardships on many for the benefit of the few; but the introduction of compulsory measures could with advantage be made in connection with the teaching of the system in all schools. In this way the growth of its use would be ensured, in the future. In addition to this, it probably would be advisable to make provision for its general adoption becoming compulsory when it has of itself, and on the strength of its own merits, become universal in a definite percentage of industries.

It appears that the Board of Trade are formulating a Bill which is intended to place the metrical commercial system on a practical basis. The precise lines of the measure are at present imperfectly known, but we are informed that it will be introduced into Parliament next session.

#### ANTITOXIN.

As is generally the case, after the first flush of excitement and novelty, a new discovery is soon dropped and forgotten by the public.

In the scientific world, however, although there is a great deal of caution exercised in accepting any new idea or process, still, if it can show a fair claim to success, an honest test of its capabilities can usually be relied upon.

Thus, in spite of the fact that little has been heard of antitoxin of late, a careful investigation of its efficacy as a preventive of diphtheria has been in progress for more than 12 months in the hospitals of the Metropolitan Asylums Board.

According to the opinions of the medical superintendents at these hospitals, the investigations have sufficiently demonstrated the value of the antitoxin treatment. The conclusion to be drawn from a general survey of the results, is that in 1895 some 250 lives were saved by the use of antitoxin in London alone.

The estimate of efficiency is based upon a contrast of the percentage mortality during the ten months of 1894 (preceeding the introduction of antitoxin), and the whole twelve months of 1895. For the year 1894 the percentage was 29.6, the lowest ever recorded up to that time. Last year, however, the percentage fell to 22.5, a reduction of 7.1 per cent., although the average severity of the disease in the two years was as near equal as can be, and the percentage of juvenile cases (which are usually less favourable) was rather higher than in 1894. Lastly, additional confirmation is to be found in the fact that those individual hospitals which made the least use of antitoxin show the highest rate of mortality. The report also deals at length with the after effects, but adduces nothing that materially affects the reliability of the deductions that must obviously be made from the foregoing particulars.

THE CRAIG OIL COMPANY NOT SUNK IN THE STANDARD.—Quite recently it was definitely stated that this Company had sold out to the well-known—too well-known Standard Oil Co. As a matter of fact, this statement is wholly erroneous as no such sale has been made. Moreover, no transfer to the Standard was ever contemplated by the firm mentioned. The Craig Oil Company further states that such rumours have been detrimental to its business, and means are to be taken to prevent their circulation in the future. The company is still conducting its business independently of the Standard, and it is the intention to continue to do so. In the face of this it is hardly likely that the paragraph reporting the sale could have emanated from the Craig Oil Company. If it was induced by the Standard, no doubt the wish was father to the thought.

## Legal Intelligence.

### HOUSE OF LORDS.

(Before the Lord Chancellor, Lord Herschell, Lord Macnaghten, Lord Morris, and Lord Shand.)

FRANK REDDAWAY AND F. REDDAWAY AND CO., LIMITED  
GEORGE BANHAM AND GEORGE BANHAM AND CO., LIMITED

This was an appeal from a decision of the Court of Appeal in a judgment of Mr. Justice Collins delivered at the trial in May with a jury in an action brought by the appellants against respondents for an injunction to restrain the latter from using the word "camel" in such a manner as to deceive purchasers into the belief that they were purchasing goods of the appellants' manufacture from passing off their goods as and for goods of the appellants' manufacture. According to the case of the appellants, the appellants Reddaway had been for many years a manufacturer of machine belts, and in October, 1892, he converted his business into a limited company under the title of F. Reddaway and Co., Limited, who were the appellants.

The case was argued some weeks ago when judgment was reserved. Their lordships delivered judgment on Thursday, 26th ult., reversing the decision of the Court of Appeal.

The Lord Chancellor: I believe in this case that the question is upon a question of fact. The question of law is so constantly raised with the various questions of fact which arise on an inquiry into the character in which your lordships have been engaged that it is sometimes difficult when examining former decisions to disentangle what is decided as fact and what is laid down as a principle of law. I myself believe the principle of law may be very plainly stated, that is that nobody has any right to represent his goods as the goods of somebody else. How far the use of particular words, signs, or marks does or does not come up to the proposition which I have enunciated in each particular case must always be a question of evidence, and the more simple the phraseology the more like a mere description of the article sold comes to be nearer to or far from a representation of the goods of the rival manufacturer the greater becomes the difficulty of proof, but if the proof establishes the fact the legal consequences appear to follow. In this case the words "camel-hair belting" suggests such a difficulty of proof. If I had been sitting as a judge in this case I confess, but for a circumstance I am about to mention, I should have had great difficulty in acquiescing in the contention that a person was making his goods pass as the goods of somebody else simply describing the subject of sale by these words. It is part of the trade or substantially made of camel hair, and it is belting. To other persons not familiar with the trade this undoubtedly does not simply a description of the article sold, and not a representation of its being made by a particular manufacturer. But then I should know what persons engaged in the trade would know by particular words, even though descriptive of the article sold, had acquired a kind of technical signification which would give to the words the trade as completely the character of being made by a particular manufacturer as if they were stamped with his trade mark. The circumstance to which I referred is to be found in the letter of July 1891. The writer, who doubtless knew what he was doing, desired that the thing which he is ordering should bear no other name than "camel-hair belting," and if he gets that he adds, "I think take this order from Reddaway's." I think with this letter the jury were perfectly right, and that my *prima facie* impression from the words being only descriptive of the article sold would have been wrong. The result is in my mind that the proof is satisfactory and that one man's goods are being sold as if they were the goods of another. Reliance appears to have been placed in the Court of Appeal on what was supposed to be decided in *Burgess v. Burgess* (3 De G. M. and G., 896) by Lord Justice Knight Bruce and George Turner, and I think it is necessary to examine the decision in *Burgess v. Burgess* to see what it really did decide, and upon which that decision was based. The Vice-Chancellor Knight Bruce had by an injunction restrained the defendant from continuing the words "late of 107, Strand," where he had been employed as a father, and from continuing on the sides of his shop door a placard the words, "Burgess's fish sauce warehouse, late of 107, Strand." The defendant Burgess had for many years been in the employ of his father in the trade of an Italian and fish sauce warehouseman, had, shortly before the application for the injunction, set up, in William-street a similar business, placing the words which the Vice-Chancellor restrained the use of on his shop door and the side of his house. An appeal was brought against the refusal of the Vice-Chancellor to go further and to prohibit the use of the words "Burgess's essence of anchovies" in any bill-head, invoice, or advertisement. The refusal of Lord Justice Knight Bruce to interfere with what the Vice-Chancellor had determined is stated by his



be grounded on the fact that the defendant carried on business under his own name, "sells his essence of anchovies, which appears to be assumed to be a known article, as Burgess's essence of anchovies, which in truth it is." "The whole ground of complaint," says Lord Justice Knight Bruce, "is the great celebrity which, during many years, has been possessed by the elder Mr. Burgess's essence of anchovies," again, he it observed, treating the words "essence of anchovies" as describing a known article not peculiar to any one manufacturer. "That," continues the learned judge, "does not give him such exclusive right, such a monopoly, such a privilege, as to prevent any man from making essence of anchovies, and selling it under his own name." And Lord Justice Turner, I think, most accurately says—"It is a question of evidence in each case whether there is false representation or not. Looking at the labels before us, I think it is clear that, since the order made by the Vice-Chancellor, there has been no representation made on the part of the defendant that the goods which he is selling are the goods manufactured by the plaintiff." I only have to add to that, that even then the learned judge did not conclude the question, for, dealing with an interlocutory injunction as they were, they left the plaintiff, if he thought proper, to try his action at law, and make out, if he could, that there was the false representation, which, if made, would give a ground of action. But it is most important to observe the hypothesis of fact upon which that judgment proceeds, and if the facts such as they have been established in this case could have been made out, I cannot understand that there is any principle of law laid down which would have prevented an injunction, although the defendant's name was "Burgess," and although the article was described by a descriptive name, which, however, had not as matter of fact in that case in the view of the judges the technical significance of being only made by Burgess the father. It seems to me, therefore, that there is nothing in that decision, or, indeed, in any other, which interferes with the propriety of an injunction where the proposition of fact with which I have started can be established, and it is to be observed that, whatever the form of the injunction, if the principle of it is duly observed, it is only such a form as prevents the mischief pointed to. It would be impossible, for instance, to say that a trader could not describe his goods truly by enumerating the particulars of what they consisted unless such description was calculated to deceive and made his goods pass as the goods of another. What in each case or in each trade will produce the effect intended to be prohibited is a matter which must depend upon the circumstances of each trade and the peculiarities of each trade. It would be very rash *a priori* to say how far a thing might or might not be described without being familiar with the technology of the trade. For these reasons I move that the judgment of the Court of Appeal be reversed, and that the respondents do pay to the appellants the costs both here and below.

Lord Herschell said: There appears to me abundant evidence to support the findings of the jury. For many years belting made of camel hair yarn had been known in the markets of the world. It had been sold under a variety of names. But there was ample evidence to justify the finding, that amongst those who were the purchasers of such goods the words "Camel hair" were not applied to belting made of that material in general; that, in short, it did not mean in the market belting made of a particular material, but belting made by a particular manufacturer. It is impossible, I think, to read the correspondence which passed between the defendants and those who were ordering goods of or procuring orders for them without seeing that this was the case. Moreover, it is impossible to doubt that the defendants were well aware of the fact. They begin by calling their belting "Arabian," and state that they are prepared to guarantee it "to be better than the belting commonly called Camel hair belting." They are told by one of their correspondents that if he has a sample similar to the one he forwards (which was made by Reddaway), "stamped Camel Hair Belting, nothing more," he thinks he can take this order from Reddaway's. They do their best to comply with their correspondent's wish, and send belting so stamped. Another correspondent asks for Sooft, which is to be quite equal to Reddaway's "Camel Hair Belting," and which must be in every respect identical to the sample of that make. It was to be stamped "warranted best Camel Hair Belting." In that or another case, it is not quite clear which, the defendants stated to the firm whom they employed to manufacture the belting that no manufacturers name must appear on it, or it would be useless. I see no reason to be otherwise than completely satisfied with the answers which the jury gave. On this assumption I proceed to inquire whether the plaintiffs have made out any right to belief. I cannot help saying that, if the defendants are entitled to lead purchasers to believe that they are getting the the plaintiffs' manufacture when they are not, and thus to cheat them of some of their legitimate trade, I should regret to find that the law was powerless to enforce the most elementary principles of commercial morality. I do not think your lordships are driven to any such conclusion. The principal which is applicable to this class of cases was, in my judgment, well laid down

by Lord Kingsdown in the "Leather Cloth Company v. The American Cloth Company," 11 House of Lords, 538. Lord Kingsdown's words were as follows: "The fundamental rule is, that one man has no right to put off his goods for sale as the goods of a rival trader, and he cannot therefore (in the language of Lord Langdale, in the case of 'Perry v. Truefitt') 'be allowed to use names, marks, letters, or other indicia, by which he may induce purchasers to believe that the goods which he is selling are the manufacture of another person.'" It is in my opinion this fundamental rule which governs all cases, whatever be the particular mode adopted by any man for putting off his goods as those of a rival trader, whether it is done by the use of a mark which has become his trade mark, or in any other way. The name of a person, or words forming part of the common stock of language, may become so far associated with the goods of a particular maker, that it is capable of proof that the use of them by themselves without explanation or qualification by another manufacturer would deceive a purchaser into the belief that he was getting the goods of A, when he was really getting the goods of B. In a case of this description the mere proof by the plaintiff that the defendant was using a name, word, or device which he had adopted to distinguish his goods would not entitle him to any relief. He could only obtain it by proving further that the defendant was using it under such circumstances or in such manner as to put off his goods as the goods of the plaintiff. If he could succeed in proving this, I think he would, on well-established principles, be entitled to an injunction. In my opinion, the doctrine on which the judgment of the Court of Appeal was based, that where a manufacturer has used as his trade mark a descriptive word, he is never entitled to relief against a person who so uses it as to induce in purchasers the belief that they are getting the goods of the manufacturer who has theretofore employed it as his trade mark, is not supported by authority, and cannot be defended on principle. I am unable to see why a man should be allowed in this way more than in any other to deceive purchasers into the belief that they are getting what they are not, and thus to filch the business of a rival. In the present case the jury have found, and in my opinion there was ample evidence to justify it, that the words "camel hair" had in the trade acquired a secondary signification in connection with belting, that they did not convey to persons dealing in belting the idea that it was made of camel's hair, but that it was belting manufactured by the plaintiffs. They have found that the effect of using the words in the manner in which they were used by the defendants would be to lead purchasers to believe that they were obtaining goods manufactured by the plaintiffs, and thus both to deceive them and to injure the plaintiffs. On authority, as well as on principle, I think the plaintiffs are on these facts entitled to relief. Reliance was placed for the respondents upon the decision of Vice Chancellor Wood in "Young v. Macrae," and in the Court of Appeal, Lord Justice Rigby regarded it as adverse to the plaintiff's contention. When carefully examined I do not think it is so. Where a patentee attaches a particular name to the production he patents, that name becomes common property as descriptive of the patented article. It possesses, indeed, no other name. That name would necessarily be applied to it by all persons desiring to purchase the article. It is not descriptive of the production of a particular manufacturer, but of the article itself, by whomsoever it is manufactured. Indeed there is no presumption that the patentee will manufacture it, even during the term of the patent; more often than not patented articles are manufactured by other persons by the licence of the patentee. What right, it was asked, can an individual have to restrain another from using a common English word because he has chosen to employ it as his trade mark? I answer he has no such right; but he has a right to insist that it shall not be used without explanation or qualification if such a use would be an instrument of fraud. Who suffer injury by such a conclusion, or would be the worse if the defendant is thus restrained? It has been shown that the public have not needed the words "camel hair" to describe a particular kind of belting; that the words have never been used in the trade in that sense. What Lord Justice James said in Thorley's case is applicable to the present. He observed: "Thorley's food for cattle had never become an article of commerce, as distinguished from the particular manufactory from which it had proceeded." It is not proposed, in the present case, to prohibit the use of the words "camel hair" altogether. The injunction granted by Justice Collins had not that effect. In the case just referred to, the counsel for the plaintiff, at the conclusion of the judgment, asked whether the substance of their Lordships' judgment was not that the defendants were not to use the name "Thorley" in connection with their cattle food. Lord Justice James replied, "We cannot prohibit them using the name if they use it in a way not calculated to mislead the public." I say the same about the use of the words "camel hair" in the present case. For these reasons I think the judgment of the Court of Appeal should be reversed.

Lord Morris concurred, although he was not quite so clear on the point as his noble friends.

The appeal was accordingly sustained with costs.



## MERSEY AND IRWELL JOINT COMMITTEE.

The usual monthly meeting of this Committee was held on Monday last, at the offices, Mosley St. Manchester, Sir J. T. Hibbert presiding.

The General Purposes Committee reported that they had met to consider the re-appointment of Sir H. Roscoe as chemical adviser, and the decision of the Committee had been in favour of his re-appointment. The Chairman then moved, and Mr. J. Brierley seconded the adoption of the report of the Committee, appointing Sir H. Roscoe chemical adviser for twelve months at an inclusive salary of £725., such salary to include travelling and other expenses.—The motion was adopted.

## THE PROGRESS OF THE COMMITTEE'S WORK.

A voluminous report "on the work which has been done for the prevention of rivers pollution in the Mersey and Irwell watersheds since the Joint Committee was constituted in October, 1891," prepared by Mr. R. A. Tatton, chief inspector, was laid before the meeting.

The report stated that "the system of disposing of cinders from factories, either by tipping them direct into the river or by depositing them on the banks to be washed away by the first flood, has been practically stopped, and the river beds are much improved in consequence. The dredgings from the Ship Canal, into which these solids eventually find their way, now contain hardly any cinders, whereas formerly they were chiefly composed of them. This result has been obtained with but few prosecutions, a remonstrance being usually found sufficient. Constant inspection of the rivers is, however, required." A table showing the progress made during the past four years stated that whereas in May, 1892, there were 27 works in operation under urban authorities, there were in March, 1896, 47 such works in operation, besides five under rural authorities. The works under construction in May, 1892, numbered eight. In March, 1896, they had risen to 30. Orders of Court to cease pollution within definite periods had been obtained in 38 cases in Lancashire and Cheshire and two in Derbyshire.

The progress made by manufacturers had been greater—as far as results were concerned—than by local authorities. This was exemplified by the condition of the rivers, those rivers which were principally polluted by sewage showing less improvement than those in which manufacturing pollution formed a larger proportion. A comparison between the Mersey and Irwell showed this in a marked degree, the former, with a watershed population of 633,493 and only 60 manufacturing works, showing little or no improvement, whereas the Irwell, with a population of 998,624 and 272 manufactories, was decidedly purer, and many of its tributaries which used to be very foul were now in fair order. The report continued:—"There seems, therefore, no reason to doubt that when the sewage pollution has been removed, the rivers will be very different from what they are now, and although in a manufacturing county like Lancashire we cannot expect to get them absolutely pure, they will at least be no longer a disgrace. The Cheshire rivers show less improvement than those of Lancashire, partly from reasons which I have pointed out, and partly from the fact that certain of their tributaries are polluted from manufactories in Yorkshire and Derbyshire; these districts, although they may be dealt with by the Joint Committee under the Act of 1876, do not come within the provisions of the private Act of 1892. In Yorkshire the Joint Committee have entirely held their hand, as a Rivers Board, which is doing excellent work, has been constituted in the West Riding, but having only got their powers in 1894, the work has not progressed so far as it has with us. With regard to the portion of Derbyshire which drains into the Mersey, no action was taken for some time, in the hope that the Derbyshire County Council would undertake the work, but progress is now being made. We have heard many complaints lately as to the unfairness of Lancashire and Cheshire manufacturers being taxed with the expense of purifying their waste waters, whilst other parts of the country are being left alone. This, no doubt, is a hardship, and is a strong argument in favour of the Act being enforced over the whole country." Purification works, the report pointed out, were necessary in 394 factories. Of these 180 had efficient "plant" in March, 1895, as compared with 45 in October, 1893. "Works with plant constructed, but not efficient, numbered 202, as compared with 77." "Works being constructed" numbered 7, in place of 17, and the heading "No treatment adopted" was applied to only 5 works, in place of 191. Mr. Tatton further stated that besides the 394 factories, about 250 drained into sewers, and the waste waters were dealt with by the local authorities. The manufacturers, taken as a whole, had met the Committee in a fair spirit, although to many of them the cost of constructing works had been very considerable. In certain cases proceedings had been found necessary, but before any action was taken the consent of the Local Government Board was required. Application to the Local Government Board had been made in 33 cases, and, with one exception, consent obtained, but in 14 cases only had proceedings become necessary. He impressed on local authorities and manufacturers the importance of the work, as if it was only half

done the rivers, although no doubt improved, would not cease to be a nuisance in the summer, and added that manufacturers who water had in many cases, especially on the Mersey and Irwell derived considerable benefit. This improvement should be until each manufacturer felt that he had a direct interest in the river above him pure. If any assistance was required to object the Committee would certainly give it.

Mr. T. W. Killick moved the adoption of the reports with commendation that it be sent to the different authorities and made concerned.

The Chairman, alluding to the different matters dealt with in the report, said that, on the whole, he considered that it detailed a satisfactory condition of things. He acknowledged the manner in which the Committee had been met by the manufacturers with whom they had to deal in their important duty of cleaning up the rivers on which the works were situated. He thought that the Mersey and Irwell Committee had powers considerably in excess of those granted many other similar bodies in different parts of the country. When they saw the effect of those powers in the river, they felt that they would be convinced that was only an argument of similar powers being extended to those other bodies. (Hear, hear.) He was glad to see that Sir Francis Powell was about to be before Parliament dealing with the question, and he hoped that the effort thus about to be made would be successful.

The report was adopted.

The remainder of the business before the Committee consisted of reports on the progress of works in different towns. The Chief Inspector reported with regard to a complaint as to the pollution of the Ship Canal Docks by a sewer. This sewer originally conducted from Moss Side, and also from a portion of Stretford. The sewage was now diverted, and was treated at the sewage works adjoining the Mersey, below Stretford. The sewage from the district still went into this sewer, but works were being constructed which would admit it into the Manchester system of drains, which would be treated at Davyhulme. The number of visits paid last three months to sewage works was 481, and manufacturing

The Consulting Sub-committee stated that Sir H. Roscoe reported on the analyses of sewage effluents made during the month. Of these, six were good, one fair, five unsatisfactory, and the latter being samples from Hyde and Salford. The Committee having received a letter from the Hyde Corporation, requesting that the consideration of the position of that Corporation be deferred for a month, in order that fresh samples of the effluent might be analysed. The Corporation of Salford had been given notice on April 20th to submit an efficient scheme for the filtration of sewage to the Local Government Board. The report was adopted.

At the conclusion of the general business of the Committee, Sir Henry Roscoe attended, and was informed of his re-appointment as chemical adviser. Sir Henry Roscoe thanked the Committee for the confidence placed in him, and expressed a hope that he would be able to be of some assistance in the future with regard to the task which they had in hand, namely, the purification of the rivers from his own experience and the facts set out in the report. Mr. Tatton, the Chief Inspector, had presented to that meeting, a statement that the condition of the water in the Ship Canal was better than in previous years, and he further stated with regard to effluents from manufacturers' works that he proposed in a short time to present a report showing the result of the works constructed as far as purification was concerned from a chemical point of view. He thought that the manufacturers had met the Committee in a fair manner, and that they ought to be thanked for having eventually attained the result for which the Joint Committee was constituted.

EXPORTS OF PITCH FROM MANCHESTER.—Manchester is now being extensively used by the patent fuel manufacturers of the South of France. Two large consignments left the canal for Cette by the steamers *Bergensen* and *Genova*. This is of considerable importance in providing outward cargoes for the port of Manchester with fruit from Spain, or wood pulp from Northern Europe, which would otherwise have to return to the port elsewhere for a cargo, and greatly increases the attractiveness of the port to owners of such tonnage. Further large shipments are arranged.

SOCIETY OF CHEMICAL INDUSTRY.—Manchester Section is hereby given that the annual meeting of the Section will be held in the rooms of the Chemical Club, Victoria Hotel, Manchester, on Friday, April 10th, 1896, at 7 p.m., to elect five members of the Section as set forth in the amended bye-laws, in the place of the members who are not eligible for re-election. After the election will be a discussion (to be opened by the Chairman) on all matters that have been read before the section, during this session, and the date of this meeting.



## Parliamentary Jottings.

### POTATO DISEASE AND STRAWSONITE.

In the House of Commons, on Monday, in answer to Mr. M'Dermott (Kilkenny, N.).

Mr. Gerald Balfour (Leeds, Central) said: The results of the experiments conducted in 1895 by the Agricultural Department of the Land Commission for the purpose of testing the value of strawsonite and other solutions as preventives of the spread of potato disease in Ireland are fully detailed in the report recently presented to Parliament. These experiments, on the whole, were most successful and satisfactory in their results, and indicate that a timely application of the solution is beneficial, not alone in prolonging the period of growth of the plant, but in lessening the ill-effects of the disease and increasing the relative yield of potatoes. I may remark that the experiments, which were originated in the year 1891 at the request of the Irish Government, have since been carried out from year to year, and the results attained, with other information, have been embodied in leaflets and very extensively circulated throughout Ireland amongst the farming classes and other interested persons. I now propose to ask the Land Commissioners to issue the recent report to Poor Law boards, agricultural societies, and other bodies interested in the matter, as well as to the Press, and also to continue the circulation of the leaflets.

### CORDITE.

In answer to Colonel Lockwood (Essex, Epping),

Lord G. Hamilton (Middlesex, Ealing) said: As yet no cordite has been made in India; but its manufacture is under consideration.

Replying to Colonel Lockwood,

Mr. Powell Williams said: Messrs. Kynoch hold two contracts, one for gun cordite and one for cordite ammunition. The gun cordite is made throughout at Arklow, and on completion is delivered into Government stores at Purfleet. The cordite for the ammunition is brought over by Messrs. Kynoch from Arklow in the form of paste. It is finished at Birmingham, and the cartridges are made up and completed by them at the same place. They are then delivered to Woolwich.

### THE BRINE PUMPING BILL.

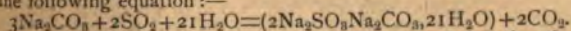
On Tuesday last, the House of Lords' Amendments to the Brine Pumping (Compensation for Subsidence) Provisional Order Bill were agreed to by the House of Commons.

## PAPER-MAKING CHEMICALS.

ONE of the disadvantages attaching to sulphite of soda is its tendency to dissociate, whereby it is robbed of its efficacy. A comparatively new salt that combines the advantages of the sulphite without its disadvantages is the double salt composed of two molecules of sulphite of soda, combined with one molecule of carbonate of soda. This salt, which may be termed a

### THIO-CARBONATE OF SODA,

is obtained in the form of crystals, containing 21 molecules of water. It is prepared, according to M. Prentice, who is the originator of the process, by mixing 7 parts by weight of sulphite with 4 parts of soda crystals and dissolving in 12 parts by weight of water. The solution so obtained is evaporated until a skin forms on the surface of the warm liquid. The whole is allowed to cool, and then a previously prepared crystal of the double salt introduced, when crystallation at once sets in. In order to obtain the crystals necessary to start the crystallising process on the large scale, a portion of the solution prepared as above is evaporated in a vacuum over sulphuric acid. It is not necessary to specially prepare the sulphite when sulphur dioxide gas is itself available, as the desired results can be achieved by passing the gas into a solution of sodium carbonate in accordance with the proportions stated in the following equation:—



Before crystallising, the evaporation should be carried farther than is necessary for either of the constituent salts by themselves, as the double salt is soluble in six times its own weight of water. The crystallisation process is always easily accomplished, as the salt is more soluble in warm than cold water.

At the ordinary temperature of the air the crystallised salt does not oxidize, but the crystals gradually lose water and become opaque. At 100° C. they lose all their combined water, which means a loss in weight of 31.35%, provided the salt has been dried out of contact with the air. When heated in the air to a temperature of 100° C. the salt becomes slightly oxidized.

By evaporating the solution at 60° C. an acid variety of the salt is obtained, which, while virtually having the same properties as the

normal salt, has the additional advantage of not losing its water of crystallisation when exposed to the air.

In preparing the solution of the salt for use, and for storing ready made for use in the near future, it is well to note that the solutions when concentrated do not oxidize in the air, but when diluted in the proportion of 1 part to 4 of water, the solution behaves in just the same way that a mixed solution of the two salts (sulphite and carbonate of soda) would.

### BASIC SULPHATE OF ALUMINA.

Among the many methods for the preparation of basic sulphate of Alumina the following is a new and rather ingenious one. It is based on the decomposition of bauxite with bi-sulphate of soda. Clay or bauxite is gently roasted, or even only boiled, with solid, or a solution of the acid sulphate, according to the method of treatment. In this way acid sulphate of alumina and sulphate of soda are obtained. The former is precipitated by treating the solution of the two sulphates with oxide or carbonate of magnesia. The basic sulphate is then separated by filtration, leaving a liquor containing sulphates of magnesia and soda. The former is separated by precipitation with sulphide of soda. The solution of neutral sodium sulphate that remains is evaporated to the crystallising point, crystallised and calcined with coal and sulphate of lime to form sulphide of soda, which is used again for the precipitation of further quantities.

As in each successive cycle of the operation a constantly increasing quantity of sulphate of soda is formed, even when a portion is worked up into sulphide, the excess is employed in the manufacture of the carbonate or hydrate. It can also be sold for the purpose of glass-making.

## THE MINERAL OIL INQUIRY.

A SELECT Committee of the House of Commons was recently appointed to perpetuate the inquiry into the Petroleum laws commenced in 1894. The following are the members that have been nominated:—Right Hon. Jesse Collings, Under-Secretary, Home Office; Sir T. Carmichael, Midlothian; Alexander Cross, Camlachie, Glasgow, of A. Cross and Sons, seed merchants, Glasgow; J. F. Flannery, Shipley; Colonel Sir E. Hill, Bristol, S.; F. Wootton Isaacson, Stepney; J. Kenyon, Bury, Lancashire; Right Hon. A. J. Mundella (chairman), Brightside, Sheffield; H. F. Pollock, Spalding; Harold Reckitt, Brigg; J. Crompton Rickitt, Scarborough; Sir J. B. Stone, Birmingham, E.; and J. Kelly, S. Leitrim. The first witness examined was Colonel Sir Vivian Majendie, her Majesty's Chief Inspector of Explosives, who stated that the great mass of petroleum used in this country was not regulated in any way by law, but only that kind which had a flash-point 73° F., close test. Thus, while the sale of that form of petroleum known as benzoline was regulated, that form which was burned in lamps was under no restriction. He was decidedly of opinion that the present law did not sufficiently provide for the public safety, even as regards that form of petroleum which was regulated. The law was very incomplete, and gravely deficient in elasticity. There was no statutory disability which would prevent anybody from storing any number of thousands of barrels in any part of London, or in any part of any other populous place. There was no regulation prescribing the use of suitable packages for the conveyance of the oil, and there was generally no power vested in any central authority to impose or require to be made regulations enjoining due precautions in the conveyance of petroleum, this being an omission which, in view of the increasing trade in bulk, was of a serious character.

**SAFETY EXPLOSIVES IN GERMAN COAL MINES.**—Mr. Henry Hall and Mr. Joseph S. Martin, two of her Majesty's inspectors of mines, have presented a report to the Home Secretary, which has just been printed, on the visit which they paid at the end of last year to Schalke, near Gelsen-Kirchen, in Westphalia, to investigate the experiments conducted there by Herr Bergassessor Winkhaus. The report contains a detailed description of these experiments, illustrated with reproductions from photographs. The inspectors think that the experiments prove, if further proof was needed, that the use of certain safety explosives in the stead of such explosives as gunpowder, dynamite, gelatine dynamite, gelignite, &c., would substantially diminish the risk of blasting operations in coal mines. English roborite appears to have been hitherto the most successful explosive. Legislation should not only specify the kind of explosive, but should also place a limit on the amount of charge and forbid its ignition except by electricity. It cannot be said that any safety explosive is absolutely safe; either ignition should take place "between shifts," in the absence of the work-people, or the vicinity of each shot should be copiously watered. The inspectors add that gunpowder is entirely forbidden in mines representing about 80 per cent. of the total production (40,000,000 tons) of Westphalia. They recommend that a return should be obtained showing to what extent safety explosives are already in use in England with a view to their compulsory and general adoption.



## The Patent List.

*This list is compiled from Official sources in the Manchester Technical Laboratory, under the immediate supervision of George E. Davis and Alfred R. Davis, who report professionally upon the value of Chemical Patents.*

### APPLICATIONS FOR ENGLISH LETTERS PATENT.

- Improvements in Lubricants. P. R. de F. d'Humy. 5,791. March 16.  
 Improved Manufacture of Soap. P. R. de F. d'Humy. 5,792. March 16.  
 Process and Apparatus for the Manufacture of Nitrate of Ammonia. G. Craig. 5,815. March 16.  
 Water Softening Apparatus. F. H. Tyacke and C. E. Gittins. 5,849. March 16.  
 Making Sewage Precipitants from the Waste Products of the Iron and Steel Industries. W. E. Adeney and W. K. Parry. 5,955. March 17.  
 Manufacture of Aluminate of Barium, or Strontium, also Aluminium Barium Sulphate or the similar Strontium Compound. D. A. Péniaikoff. 6,096. March 18.  
 Sewage Treatment Compounds. H. B. Sharp. 6,132. March 19.  
 Separating Silicic Acid from Argillaceous Substances. F. Brünjes. 6,157. March 19.  
 Separating Dust from Air. H. Simon. 6,164. March 19.  
 Treating Sodium and Potassium Chloride by Electrolysis. C. H. Parker and John Pullman. 6,216. March 20.  
 Treating certain Earths to Extract Soluble Matters therefrom. J. S. Pattinson and Fawcett Preston and Co., Ltd. 6,270. March 21.  
 Producing Double Aluminium Sulphides. D. Péniaikoff. 6,290. March 21.  
 Tanning Skins rapidly without Acids. C. Master and M. J. Myers. 6,325. March 21.

### ABSTRACTS OF LATEST COMPLETE SPECIFICATIONS.

*These abstracts are specially prepared for the Chemical Trade Journal and ALL RIGHTS of publication are RESERVED. This is the earliest series of abstracts of Chemical and allied patents accessible to the public.*

- Improvements in or Relating to Precipitation Tanks for the Clarification of Sewage and Impure Waters. J. S. Pickering, Pool Bank-street Nuneaton, Warwickshire. Eng. Pat. 4,186. February 27th, 1895.

The tanks at the upper part are fitted with a filtering arrangement formed of planks carried on cross girders, the planks being kept slightly apart by pegs and covered with a filter bed of three sizes of gravel. The filtration takes place from the bottom upwards. The filter bed is flushed periodically by removing the sludge from the bottom of the tank. The filtered sewage overflows from the top of the tank into channels provided for its reception. There are three drawings showing the tank in plan and the bed in sectional elevation.

- Improved Method of Purifying Water. T. Royle, Dalton House, Upton lane, London, E. Eng. Pat. 8,256. April 26th, 1895.

Three parts of a 5% solution of potassium permanganate are added to every 10,000 parts of water to be purified. After complete mixing three parts of a 10% manganous chloride solution are added, and the whole filtered or settled by subsidence. When treating manufacturing effluents permanganate is added until a pink colour is obtained, a similar quantity of the manganous chloride solution being subsequently added. Lime can be used during or after the purifying process to soften the water.

- Improvements in the Treatment of Gas Liquor or like Ammoniacal Liquor, and in Obtaining Useful Products therefrom. H. Bower, 29th Street and Gray's Ferry-road, Philadelphia, U.S.A. Eng. Pat. 8,330. April 26th, 1895.

Metallic iron or a salt of iron is put into the crude gas liquor in sufficient quantity to convert the hydrocyanic and sulphocyanic acids into corresponding iron salts. The mixture is then treated in the stills in the usual way. So far this procedure is the same as that described in Patent 2,918, 1882.

After the ammonia has been expelled, the spent liquor (which now contains ferrocyanide and sulphocyanide of calcium) is treated with an acid solution of cuprous chloride, to form ferrocyanide and sulphocyanide of copper. The chloride is used to form a soluble salt with lime, and the cuprous salt because cuprous sulphocyanide is insoluble. The precipitate is filtered off, and while wet treated with fine iron borings or filings, thus decomposing the copper salts into insoluble ferrocyanide of iron, soluble sulphocyanide, and metallic copper. On treating the ferrocyanide of iron with an alkali, the corresponding alkaline ferrocyanide is obtained, while the solution of sulphocyanide of iron yields crystals of the same on being concentrated.

- Improvements in the Manufacture of Prussiates. H. Bower, 29th Street and Gray's Ferry-road, Philadelphia, U.S.A. Eng. Pat. 8,381. April 1895.

Sulphocyanide of iron is referred to in Specification 8,330, in one of the products resulting from the process therein described *supra*. The present invention relates to the conversion of compound into alkaline prussiates.

Carbonate of potash, iron, and nitrogenous materials are treated the usual way as for the production of prussiate of potash, then at a stage, but preferably towards the end, the sulphocyanide of iron is added in small quantities so as to be thoroughly decomposed and reduced to cyanide. When the fusion is complete the resultant contains cyanide and sulphide of potassium, and sulphide of iron, which, after cooling, is lixiviated with water, forming a prussiate. The chief claim is the decomposition of the sulphocyanide of iron by the cyanide of potassium formed *in situ*.

- A Process for the Electrolytical Production of Zinc from its Oxide. Siemens Bros. and Co., Limited, 12, Queen Anne's Gate, Westminster (communicated by Siemens and Halske, Berlin). Eng. Pat. 1,575. March 22nd, 1896.

The zinc oxide in the prepared ores is dissolved out by a solution of neutral aluminium sulphate, having the composition  $Al_2(SO_4)_3 + 18H_2O$ . This is best done by using a warm solution containing from 100 to 200 grammes of sulphate per litre, which gives a solution of zinc sulphate and basic sulphate of aluminium. After separating the clear solution the same is electrolysed with a current of about three volts. No diaphragm is needed. Iron and steel cathodes can be employed on which the zinc as it deposits also galvanises. The anode is insoluble. While the zinc is thus obtained, the basic sulphate of aluminium is reconverted into the neutral state, and is ready for use over again on a fresh batch of ore.

## THE LIFE WORK OF LIEBIG.

By A. HOWARD.

(Continued from page 211.)

**Basicity of Organic Acids.**—It was largely owing to the influence that Davy's views regarding the nature of acids were more prominently brought under the notice of chemists. According to the older investigation all acids and salts must contain oxygen. Berzelius struck the first blow at this conception when, after his researches on HCl and Cl, he represented this acid as a combination of the elements chlorine with H. Later on Davy and Dulong concluded that H was an essential constituent of acids. Their opinions on this subject were opposed by Berzelius, as they appeared not to be in accord with the electro-chemical theory, in which he had combined and developed the dualistic hypothesis of Lavoisier and the electro-chemical conception of Davy. Consequently Davy and Dulong's views lost ground. Daniell's studies in electrolysis led to new ideas of the electrochemical constitution of acids and salts. The final return to Davy and Dulong's views was largely due to Liebig's papers, in which he advanced his theory of polybasic acids. In the early years of this century chemists held views on the relations of acids and alkalis which practically involved the assumption that all acids are of equal value in their neutralising alkalis, until Graham, in 1833, published his researches on the phosphoric acids and showed that when  $P_2O_5$  (phosphoric anhydride) dissolves in water it can generate three distinct acids, with different powers of neutralising alkalis. In 1837 Liebig, in connection with Dumas, published a paper "on the constitution of acids," in which, for the first time, the theory of polybasic acids was put forward. In the course of his work he soon saw that the hydrogen theory of acids was both probable and convenient. He defined as particular compounds of hydrogen, in which the latter was replaced by metals.

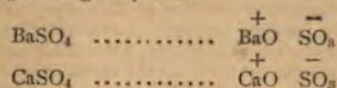
One of the most interesting discussions in which Liebig was related to the constitution and relations of alcohol and ether. According to Liebig the relation of these organic compounds to inorganic substances is very simple and intelligible. They contain a common radical ethyl ( $C_2H_5$ ), alcohol being its hydroxide and ether its oxide. The modern view is in all its essentials founded solely on the views of Liebig, according to which organic chemistry was defined as "chemistry of organic radicals."

**Substitution.**—At first Liebig did not accept the theory of substitution. I should like to briefly indicate the overthrow of the old theory which was effected by this idea of substitution. The dualistic theory was introduced into chemistry by Lavoisier; it reached its highest development in the hands of Berzelius. According to Lavoisier, however great may be the complexity of a compound, we may detect in it evidence of two constituent parts, e.g. :—

Calcium oxide contains a metal Ca and oxygen.  
 $BaSO_4$  is a compound of BaO and  $SO_3$ .



Early in the century Berzelius, by his electro-chemical theory, had offered an explanation of dualistic combination which was consistent with the knowledge of electrolysis then possessed by chemists. Berzelius assumed that the atoms were electrified, and possessed at least two poles, whose quantities of electricity are in most cases unequal. Thus the elements could be classed as positive and negative, according to which electricity prevailed. Chemical combination, according to this theory, consists in the attraction of the dissimilar poles of the atoms, and consequently in the neutralising of the two electricities. As, however, these were not always equal in amount, the compound produced was itself frequently electric, and therefore capable of entering into further combinations. Thus, according to Berzelius, each compound consists of two different parts, as suggested by Lavoisier, which attract each other in consequence of their different states of electrification. In accordance with these ideas Berzelius represents  $\text{BaSO}_4$ ,  $\text{CaSO}_4$ , &c., thus:—



When organic chemistry began to develop, Berzelius tried to bring the radical theory of organic chemistry into agreement with the dualistic hypothesis. According to him compound radicals were unalterable groups. The discovery of trichloro-acetic acid by Dumas led to the abandonment of the views of Berzelius. Here it was found that an electro negative atom like chlorine could replace an electro positive atom of hydrogen in acetic acid without changing the acid properties of the substance. Berzelius, in face of this discovery, vigorously defended his opinions. He was at first supported by Liebig. The reconversion of trichloro-acetic acid into acetic acid by nascent hydrogen convinced Liebig that the character of a chemical substance does not only depend on the nature of its constituent atom, but also on the manner in which these atoms are arranged. He declared that Dumas' theory of substitution explained a great number of phenomena in organic chemistry.

In 1832 Liebig's experiments on the action of chlorine upon alcohol resulted in the discovery of chloroform and chloral. Liebig overlooked the small quantity of H (0.8%) which  $\text{CHCl}_3$  contains, and he called it a chloride of carbon. Fifteen years later chloroform was first employed as an anesthetic by Simpson, of Edinburgh.

Liebig really discovered bromine in the mother liquors from the salt works. He found they contained iodine, and on saturation with chlorine yielded on distillation a liquid having the external properties of iodine chloride ( $\text{I Cl}$ ). The liquid differed in many of its chemical reactions from iodine chloride. Liebig was so certain that the liquid was the chloride of iodine that he was able to explain away the difference. Several months later he received Balard's paper. He had himself really prepared bromine—he had labelled it "chloride of iodine."

Liebig introduced the use of alkaline pyrogallous acid to absorb oxygen in gas analysis.

**Liebig's Condenser.**—Note in *Nat.*, February 20th, 1896. The inventor was C. E. Weigel, professor of chemistry and botany in the university of Griefswald. The account of this apparatus, with diagrams, first appeared in 1771—50 years before Liebig was born. Liebig never described this condenser as his own.

A mere list of the most important of his 318 papers would be far too long and too tedious for a brief paper such as this.

To conclude Liebig's chief contributions to pure chemistry may be mentioned his inquiry into the chemistry of the change of alcohol into vinegar. It had long been known that dilute solutions of alcohol, when exposed to the air, were converted into vinegar. The exact nature of the chemical changes involved for long remained unexplained. He showed that the change takes place in two stages:—

1. Alcohol loses H, and is transformed to aldehyde.
2. Aldehyde takes up O and is transformed into acetic acid.

Liebig noticed the reduction of ammoniacal solutions of  $\text{AgNO}_3$  by aldehyde, and its use in preparing mirrors.

**Fermentation.**—The word fermentation is derived from the Latin *ferreo* (I boil), and may be supposed to owe its origin to the effervescence which occurs when saccharine liquids are left to themselves in contact with air, or when placed in contact with a ferment such as yeast. It was impossible to make any headway at all till the microscope had been perfected; still, a good start had been made in organic chemistry. According to Liebig, fermentation is to be considered an essentially chemical phenomenon. According to his opponents, fermentive changes depend, in many cases at least, on the life process of certain minute organisms. It is one of the distinguishing features of a ferment that a very little of it goes a long way.

An early attempt to explain fermentive changes chemically was that of Berzelius. Lavoisier having shown that sugar is split up by fermentation into alcohol and carbonic acid gas, Berzelius suggested that the action of the yeast is catalytic. This so-called explanation of the phenomena seems to have been regarded for some time as satis-

factory. Since, however, the nature of a catalytic action was not itself understood, it did not in reality throw much new light on the subject. It was simply the employment of a word to cover his ignorance of the subject.

Before it was known that yeast consisted of living cells, Liebig's mechanical chemical theory of fermentation gained many adherents. This theory, which was propounded in the year 1839, attempted to explain alcoholic and other similar processes from one common point of view. Liebig here regarded ferments in general as easily decomposable bodies, from which the stimulus to the decomposition of fermentable substances proceeded.

In 1836 came the important discovery, made simultaneously and independently by Cagniard de Latour and Schwann, that yeast consists of low organisms which are self-propagating. The subsequent researches of Pasteur confirmed the correctness of these observations. From all this the vitalistic theory of fermentation followed as a natural consequence. According to this theory the decomposition of the sugar is dependent upon the vitality and consequent activity of the yeast fungus.

Other processes of fermentation were now investigated from the standpoint thus obtained, with the result that low organisms were found to be the cause of the action in their cases also. I should refer here to the splendid researches of Pasteur upon the acetic and lactic fermentations.

Liebig maintained an antagonistic attitude to the vitalistic theory of fermentation. He did not, indeed, contest the organised nature of yeast, but would not acknowledge that yeast itself gave rise to fermentation through its life processes. Instead of this he assumed in yeast the presence of an albuminous ferment, which, on the death of the plant, he imagined to bring about the decomposition of the sugar into alcohol and carbonic acid.

In spite, however, of the success of the germ theory, it cannot be said that it has overthrown its rival. Although the connection of many fermentations with the life of definite organisms has been clearly proved, there remain a number of changes, which may also be described as fermentations, the occurrence of which does not depend upon such organisms. And, besides, though it is clear that in many cases fermentation depends on the presence of micro-organisms, we do not yet know how these organisms act. We do not know whether they live on the fermentable matter and excrete the products of the fermentation, or whether the microbes produce soluble ferments like the *enzymes*, which afterwards bring about the fermenting of the fermentable substances in some manner more or less like that which Liebig suggested. It may be pointed out that the amount of the products of a fermentation is usually very great in proportion to the mass of the organisms concerned and to the time they are in action. Again, soluble ferments have been isolated from these organisms.

The *enzymes* are believed to be unorganised chemical substances which result from the activity of living cells, e.g., pepsin. The changes which they bring about are analogous to those induced by the organised ferments themselves. Whilst Liebig was wrong in denying the existence of any connection between the organisms and the fermentations, it must be admitted, on the other hand, that his opponents have not yet succeeded in explaining their mode of action; so that it is not impossible that some modification of the theory of Liebig may yet be found useful. The rival theories of fermentation have done a splendid work by stimulating and guiding workers in this field of science, from which rich crops have already been gathered, and which seems to promise results in the future such as the earlier workers may scarce have dared to dream of when they began their labours. Theories seem to be to research that which examinations are to ordinary students of chemistry. They both lead to work being done.

It now seems possible that the difference between an organised and an unorganised ferment may be this—that the active agent of the organised ferment is one which only acts within the cells in which it is formed, and which has not yet, with one or two exceptions, been separated from the cells which contain it; whilst the unorganised ferments are those which can act outside the cells which produce them.

(To be continued.)

**THE NEW DEE IRON WORKS.**—Rapid progress is being made by Messrs. Summers, of Huddersfield, with the erection of their new iron-works on the Dee, near Queensbury. The roofs are ready for placing on several departments. A line has been brought from the new railway at Hawarden Bridge right into the works.

**SALT EXPORTS VIA THE CANAL.** The barque *British America*, 1,050 tons register, sailed from Saltport on Sunday last, for St. John's N.B., with a large cargo of salt, and the barque *Maiden City*, 850 tons, left Runcorn on the same day with a similar cargo, also for St. John's. Both vessels had previously discharged full cargoes of deals from North America.



## THE DIFFICULTIES OF LOW-TEMPERATURE RESEARCH.

AT the Royal Institution, on Friday, last week, Professor Dewar, F.R.S., made some interesting remarks upon the apparatus to be employed and the difficulties to be overcome in approaching the zero of absolute temperature. Below  $-210^{\circ}\text{deg}$ , he said, to obtain a single degree of greater cold involved a positive struggle with nature. The present aim of low-temperature research was to get below the critical point of hydrogen, and the only means by which this was possible was by the adiabatic expansion of hydrogen itself. The principle discovered by Thomson and Joule, that cold was produced if gas at high pressure was allowed to escape from a very minute orifice, had been utilised with success. Thus, if a jet of air at high pressure issued from an orifice one-quarter to one-tenth of an inch in diameter were made to impinge on the outside of a tube containing air, so much cold was produced that the air in the inside tube would condense on the sides in a liquid form, provided, of course, the whole apparatus was efficiently isolated with regard to heat. In a similar manner, a hydrogen jet could be used, as was experimentally shown, to produce a temperature low enough to freeze air to a hard, white solid. A hydrogen jet at ordinary temperatures, however, would give no reduction of temperature; that would only be obtained if the gas were initially cooled to a temperature much nearer its critical point. The efficiency of such a process was by the nature of the case very small, and the fact that the expansion of hydrogen at a pressure of 500 atmospheres and a temperature of  $-200^{\circ}\text{deg}$ , would only produce about  $7^{\circ}\text{deg}$ . of greater cold than would be won by its expansion at the same temperature from a pressure of 100 atmospheres showed the difficulties encountered in attempting to reach temperatures sufficient to liquefy hydrogen. Even suppose the liquefaction accomplished, the difficulty of collection was very great, for the density of liquid hydrogen at the boiling point could not be above one-tenth that of water. But, in spite of these obstacles, Professor Dewar believed that some day some one would succeed in collecting it and carrying out investigations upon its properties.

## Market Reports.

### TAR AND AMMONIA PRODUCTS.

Benzols are firm, with an upward tendency: 90's stand at 2s. 2d. for prompt sales, and 50/90's, 1s. 8d. to 1s. 9d. In carbolic acids there is no change in the price of either crude or crystals. Crude naphtha is steady at 9d., but solvent is rather weaker, the nearest value perhaps being 1s. 3½d. Creosote and anthracene are nominally unaltered. Pitch quiet, at 33s. to 33s. 6d. f.o.b. East Coast.

Sulphate of ammonia is quite out of joint. In London "cover" sales have been fairly good, but the rest of the producers seem to have been out of it altogether. As there are signs of the season coming to a close soon, makers have reduced their prices in a manner hitherto unheard of. Beekton value is £8.; London outside makes, £8. 2s. 6d.; Liverpool, £8.; and Hull and Leith £8.

### THE METAL MARKETS.

LONDON, WEDNESDAY.—Pig iron, dull: Scotch warrants closed at 46s. 7d.; Middlesbrough, 38s. 2½d. cash, and hematite, 48s. 2½d. Copper, steady: Chili bars, G. O. B.'s and G. M. B.'s, closed at £44. 16s. 3d. to £45. 1s. 3d. cash, and £45. 3s. 9d. to £45. 8s. 9d. three months. Tin, firm: Straits closed at £60. 12s. 6d. to £61. 2s. 6d. cash, and £61. 5s. to £61. 15s. three months; Australian, £61. 7s. 6d.; English ingots, £64. 10s. Lead, quiet: Spanish, £11. 1s. 3d. to £11. 2s. 6d.; English, £11. 5s.; Silesian spelter, ordinary, £15. 7s. 6d. to £15. 10s. Nickel, 1s. 2½d. Antimony, £30. Quicksilver: first hands, £6. 17s. 6d.; second hands, £6. 16s. 6d. Copper shares, steady: Cape, 2½ to 2¾; Copiapo, 2 to 2¼; Libiola, 3 to 3¼; Mason and Barry, 2½ to 3½; Rio Tinto, 18½ to 18¾; Tharsis, 5¼ to 5½.

### REPORT ON MANURE MATERIAL.

There has been more inquiry for immediate delivery, and during the week fair business has been done. There is no improvement in mineral phosphates, notwithstanding the reduced output in Florida and Carolina. The quotation for 75/80% Florida is 6d. to 6¼d. per unit, according to port of discharge, and the value of South Carolina river rock is about 5½d. per unit, in cargoes, c.i.f., to United Kingdom. Algerian of similar quality is worth about same price. In the absence of cargoes offering there is nothing fresh to report in River Plate bones. Shippers seem inclined to entertain business at about £3. 17s. 6d. for summer-autumn shipment. On spot, Bombay bone meal is selling at

£4. per ton, ex store, but for March-April shipment £3. 17s. 6d. per ton would be accepted, and perhaps something less. From store £4. per ton required for crushed Kurrachee bones; £3. 17s. 6d. required for March-April shipment. For nitrate of soda there is a good demand, but in face of the large supply the price is steadily maintained, at 8s. to 8s. 1½d. per cwt., according to quality, on spot. Due cargoes are worth barely 8s., ordinary quality. Home-prepared dried blood is selling at 7s. 6d. to 7s. 9d. per unit, free on rails at works, the demand for this article having improved lately.

## LIVERPOOL OIL AND COLOUR MARKET.

WEDNESDAY.

OILS.—Palm oil is easy, but there is more disposition to do business. Sales of Lagos are reported at £19. 10s. to £19. 5s. per ton transit. The conditions of business in olive are greatly restricted, and there is little doing; prices, however, show no signs of weakening at the moment. Linseed is, if anything, a shade firmer in price, but this firmness is about counterbalanced by the check to business. Liverpool makes in export casks are quoted 19s. 9d. to 21s. per cwt. There is no change in cottonseed values, and there is a moderate inquiry at the figures last quoted for Liverpool refined. Virtually, castor oil is the same as last reported, good seconds Calcutta, being unaltered; while business in first pressure French is reported at 2½d., though the quotations range from 2½d. to 2¾d. per lb. Tallow is quiet and unaltered, while resin is moving slowly at the full prices that have been ruling of late. There is a steady demand for spirits of turpentine, at 21s. 3d. per cwt., which price is only applicable to spot parcels. Petroleum is firm, especially refined. Russian is quoted 5¼d., and American 6¼d. to 7½d. per gallon.

COLOURS are steady, without alteration in prices. Ochres: Oxfordshire, common, £10., medium, £12., best, £15. Derbyshire, common, 40s.; medium, 50s., best, 60s.; Welsh, best, 90s., seconds, 50s., and common, 18s.; Irish, Devonshire, 40s. to 45s.; French, J.C., 60s. to 65s.; M.C., 65s. to 67s. 6d. Umber: Turkish quiet; Devonshire, 50s. to 55s. White lead, £16. Red lead unchanged. Venetian red, £6. to £10. Cobalt: Prepared oxide, 9s. 9d.; black, 9s.; blue, 6s. Zaffres: No. 1, 3s. 6d.; No. 2, 2s. 6d. Oxide of iron: Common, £7.; medium, £10.; finest, £20. Zinc oxide, £22. 10s. to £25.

## LIVERPOOL MINERAL MARKET.

The firmness reported last week has been well maintained, and in some minerals there has been a further advance. Manganese still continues scarce; arrivals are *nil*, stocks are exhausted, and the production is not keeping pace with the consumption; prices therefore are springing rapidly, and there is every probability of even a further advance in figures as the consumption is considerably increasing. Ground manganese is also in improved demand, whilst prices continue firm at the last advanced figures, viz., £8., £10., £12., and £15. per ton, according to grade. Manganiferous iron ore naturally follows in the wake of manganese, and prices are advanced 1s. to 2s. per ton this week. Chrome ore: Arrivals are somewhat improved, and prices are practically unaltered; with the increased consumption both for steel and chemical trades advanced prices are anticipated. Bauxite continues brisk at full prices as last quoted, with the probability of a further advance on account of the increased demand for the aluminium metal and other new processes. French chalk: The production can scarcely keep pace with the demand, especially in the higher grades; prices are therefore somewhat advanced upon the last figures, 60s. to 70s., 80s. to 90s., and 100s. to 110s. per ton for "Angel White" brand, according to quality. Wolfram and scheelite continue steady, with more business doing. Ferro-Tungsten and Ferro-chrome are in fair demand, at advanced prices. Arsenic is very scarce, at further advanced prices. Fuller's earth steady, at 50s. for lump, 55s. for ground, and 75s. per ton for impalpable powder, "Emerald" and other brands. Ochres and umbers are quiet, at 60s. to 65s. per ton for J.C. ochre, and 40s. to 45s. per ton for prime umber. Anti-friction ore: There is nothing new to report in this article. Pumice-stone: There is more inquiry for prime lump and powdered; £6. to £7. per ton for powdered and £7. 10s. for prime Tenerife lump. Keiselguhr is in increasing demand, at £4., £6., and £8. 10s. per ton. Asbestos and mica are in good demand, for high-class qualities particularly. Bog ore: Stocks are practically exhausted, and prices are firm. Magnesite: Sales continue slow, at last figures. Plumbago is very active, foundries' and lubricating qualities being brisk at full prices, £6. to £10. per ton, and prime Ceylon at £15. to £20. per ton. Lead ore is quiet, at unaltered prices. Carbonate and sulphate of barytes: The production has somewhat improved, but the demand is quiet. Molybdenite, cerite, euxenite, orthite, etc., are in quiet demand.



**The Gas Enrichment and Solar Oil Co., Ltd.**—CAPITAL, £200,000., divided into 200,000 shares of £1. each, 75,000 of which are six per cent. preference. This company has been formed to acquire the British patents of Dr. Dvorkovitz, or any other similar patents, relating to the improvement in the manufacture of gas and bye-products from petroleum; also to carry on business as producers of and suppliers of water-gas, enriched or not by oil-gas; to import various petroleum products, and to construct, maintain, or improve, acquire, and work any railways, tramroads, steam or other vessels, etc. The signatories are:—E. Lane, 26, Great St. Helens, E.C.; P. Dvorkovitz, Devonshire Chambers, Bishopsgate; B. Parker, St. Michael's Rectory, Cornhill, E.C.; M. W. Ash, 18, Trebovir-road, South Kensington; W. Dunn, 22, St. Collin's-bank, Blackheath; G. C. M. Miller, Rectory-place, Chislehurst; O. Hollebone, St. John's-road, Putney.



**Trapps Oil-Gas Fuel Patent Syndicate.**—CAPITAL, £1,000., in £1. shares. This company has been formed to carry on and transact in Great Britain and elsewhere the business of miners, oil refiners, coal and shale merchants, etc.

**Birds' Soap Co., Ltd.**—CAPITAL, £25,000, in £10. shares. This company has been formed to acquire the South Wales Crown Soap and Candle Co., Ltd., East Moors, Cardiff. The subscribers to the memorandum of agreement are: R. Bird, Ellerslie, Cardiff, oil importer; Mrs. E. Bird, Ellerslie, Cardiff; C. H. Bird, 38, Newport-road, Cardiff, oil importer; Mrs. C. H. Bird, 38, Newport-road, Cardiff; F. G. Bird, 6, Fitzalan-place, Cardiff, oil importer; W. R.

Bird, 46, The Parade, Cardiff, engineer; A. G. Bird, Ellerslie, engineer.

**Aluminium Products Syndicate, Ltd.**—CAPITAL, £6,000, in £1. shares. This company has been formed to carry on the business of dealers in and manufacturers of aluminium, etc., and to carry on the business of curriers and tanners. The subscribers to the memorandum of agreement are:—T. W. Precious, 1, Norland-gardens, Nottm accountant; R. Webb, 14, Saunders-road, Nottm Hill, W.; Mrs. C. Webb, 14, Saunders-road, Nottm Hill, W.; A. H. 23, Bouverie-street, E.C., agent; C. S. Westbrook, 23, Bouverie-street, E.C., clerk; A. J. Goffe, 23, Bouverie-street, E.C., Desenne, 11, Ashburnham-road, Chelsea, assistant.

## IMPORTS OF CHEMICAL PRODUCTS

AT  
THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

### LONDON.

Week ending March 21st.

**Acetate of Lime**—  
U. States, 803 bgs. Johnson & Hooper

**Acetic Acid**—  
Holland, 100 pks. Beresford & Co.  
" 60 A. & M. Zimmermann

**Acetone**—  
Germany, 8 drs. Stein Brs.

**Alum**—  
Holland, 173 pks. Ohlenschlager Brs.  
Belgium, 24 H. Wallace & Co.  
Germany, 120 bgs. R. W. Greff & Co.

**Ammonium Chloride**—  
Holland, 7 cks. H. Lorenz

**Antimony Ore**—  
Australia, 15 t. Vivian, Younger & Co.  
" 8 t. H. Bath & Son

**Asbestos**—  
Italy, £70 Capt. Balmainio  
" 113 Imperial Asbestos Co.  
" 135 London Asbestos Co.  
" 10 Girard Frs. & Co.  
Germany, 16 T. H. Lee  
N'found'd, 275 Furness, Withy & Co.  
France, 17 Mory & Co.

**Barytes**—  
Germany, 46 cks. W. Harrison & Co.  
Belgium, 124 30 bgs.  
" 36 cks. 22 brls. J. L. Lyon & Co.  
Holland, 101 Robertson, Selly & Co.  
" 21 W. Harrison & Co.  
Belgium, 46 O'Hara & Hoar  
" 139

**Bone Meal**—  
E. Indies, 100 t. Fox, Roy & Co.  
" 100 A. Hunter & Co.

**Bromide of Iron**—  
Germany, 5 cks. A. & M. Zimmermann

**Bromine**—  
Germany, 20 cs. A. & M. Zimmermann

**Caoutchouc**—  
E. Indies, 30 c. L. & I. D. Jt. Co.  
" 15 Prop. Bull Wf.  
Penang, 406 E. Boustead & Co.  
E. Indies, 21 Major & Field  
Aden, 5 Anderson, Weber & Co.  
Natal, 16 Prop. Bull Wf.  
Zanzibar, 31 Clarke & Smith  
Singapore, 200 H. A. Litchfield & Co.  
" 612 G. Ward & Sons  
Madagascar, 8 Lewis & Peat  
" 11 S. Figgis & Co.  
E. Indies, 19 Ralli Brs.  
Madagascar, 38 L. & I. D. Jt. Co.  
" 17 Blyth, Greene & Co.  
France, 44 L. & I. D. Jt. Co.  
Zanzibar, 7 Major & Field  
E. Indies, 17 A. Lawrie & Co.

**Castor Oil**—  
France, 12 cks. C. Windschuegl & Co.  
" 15 brls. G. Boehm  
" 3 L. & I. D. Jt. Co.

**Caustic Potash**—  
Holland, 20 J. M. Steel & Co.  
" 20 J. Owen  
Belgium, 16 Petri Brs.

**Chemicals (otherwise undes.)**—  
Belgium, £306 T. Palmer  
Germany, 727 A. & M. Zimmermann

" 137 T. H. Lee  
" 6 Phillipps & Graves  
France, 13 Flagecollet & Co.  
" 165 B. & F. Wf. Co.  
Holland, 13 F. Boehm  
" 14 J. Barber & Co.  
U. States, 78 Lunham & Moore

**Cobalt Ore**—  
New Caledonia, 151 t. R. Waters

**Colours**—  
Germany, 3 cs. L. & I. D. Jt. Co.  
Holland, 6 cks. R. Baelz & Co.  
" 2 O'Hara & Hoar  
" 2 J. Owen

**Cream of Tartar**—  
France, 8 cks. B. & F. Wf. Co.  
Spain, 5 A. E. Piggott  
" 8 9 brls Beresford & Co.  
" 5 E. & T. Pink  
Italy, 18 B. Jacob & Sons  
" 106 Howard & Sons  
Portugal, 10 Kemball, Bishop, & Co.  
Holland, 10 Kirkpatrick, Barr & Co.  
France, 6 C. Atkins & Nisbet  
" 20 W. C. Bacon & Co.

**Dextrine**—  
Germany, 63 bgs. M. D. Co.

**Dyestuffs**—  
**Aniline**  
Holland, 1 pk. L. C. & D. Rly.  
France, 1 "

**Argols**  
Italy, 105 bgs. Thames S T. & L. Co.  
Greece, 14 cs. P. A. Gavas

**Cochineal**  
Canaries, 15 bgs. W. M. Smith & Sons

**Cutch**  
Rangoon, 56 bxs. L. & I. D. Jt. Co.

**Extracts**  
Belgium, 25 cks. L. J. Levinstein & Sons  
Denmark, 1 Sorensen & Co.  
Holland, 3 Phillipps & Graves  
Denmark, 45 pks. A. F. White & Co.

**Gambier**  
U. States, 120 A. J. Humphery  
Belgium, 50 Leach & Co.

**Indigo**  
E. Indies, 50 cmts. Forbes, Forbes & Co.  
" 114 J. H. Hall & Wilson  
" 10 Phillipps & Graves  
" 63 Arbuthnot, Latham & Co.  
" 463 Patry & Pasteur  
" 57 Ross & Deering  
" 9 Young, Sargant & Co.  
" 5 F. Huth & Co.  
" 16 Haefliger, Hilpert & Co.  
" 10 Marshall & French

" 3 F. W. Heilgers & Co.  
" 16 Lewis & Peat  
" 16 Riddell Brs.  
" 9 Ralli Brs.  
" 40 J. Owen  
" 37 H. J. Perlach & Co.  
" 68 Elkan & Co.  
" 13 H. Johnson & Sons  
" 61 Begg, Dunlop & Co.  
" 225 P. & O. Co.  
" 24 J. Hatton Hall & Co.  
" 41 Ernsthausen & Co.  
" 650 L. & I. D. Jt. Co.  
" 50 Union L. Co.  
" 5 Schonlank, Engel & Co.  
" 15 Parry & Co.  
" 63 Croysdale & Co.  
" 95 Walker, Munzie, & Co.  
" 82 P. Macfadyen & Co.  
" 313 J. Finlay & Co.  
" 6 H. W. Jewesbury & Co.  
" 54 Parsons & Keith  
" 6 Ross & Deering

**Myrabolams**  
E. Indies, 724 bgs. L. & I. D. Jt. Co.  
" 275 Dalton & Young  
" 270 Darling Brs.  
" 933 Baxter & Hoar  
" 6 Lambert & Strong

**Orchella**  
Ceylon, 60 bgs. Anderson, Weber & Co.  
Ecuador, 55 131 bls. Prop. Bull Wf.  
Ceylon, 1 bl. L. & I. D. Jt. Co.

**Saffron**  
Spain, 1 cs. J. H. Fox & Co.

**Shumac**  
Spain, 50 bgs. Phillipps & Graves  
Italy, 150 J. E. Scott  
" 850 J. Mitchell  
" 250 McDougall & Bonthron  
" 275 bls. Clark, Gray & Co.  
France, 100 Ross & Deering

**Tanner's Bark**  
Natal, 3 t. Flack, Chandler & Co.  
" 54 Boutcher, Mortimore & Co.  
Belgium, 26 Sawyer, Sons & Co.  
Natal, 16 A. J. Humphery

**Farina**—  
Holland, 50 bgs. J. Knill & Co.  
" 310 Seaward Brs.  
" 50 H. Lorenz  
" 100 R. G. Hall & Co.

**Glucose**—  
U. States, 150 pks. 860 c. Bennett  
" 1,000 1,000 S. S. Co.  
" 1,000 L. & I. D. Jt. Co.  
" 665 1,500 G. W. Pointing  
Egypt, 6,000 J. R. Francis & Co.  
" 100 E. & T. Pink  
" 60 Page, Son, & East  
" 300 C. Southwell & Co.  
" 100 600 T. J. Lipton  
" 500 500 E. Dixon  
" 100 600 Union L. Co., Ltd.  
" 250 250 Cole & Carey  
" 700 700 G. Clark & Son  
" 250 482 Thames S. T. & L. Co., Ltd.  
" 100 100 C. S. Lovell  
" 5,265 12,748 R G Hall & Co.

Germany, 25 197  
U. States, 250 250

" 650 650  
" 75 413  
" 250 250  
" 100 500  
" 50 304

**Glue**—  
Belgium, £628

**Iron Perchloride**—  
Holland, 15 cks.

**Lime**—  
Belgium, 180 t. Miller & Co.

**Lithopone**—  
Holland, 20 cks. Spies B.  
" 20 Burt

**Magnesium Sulphate**—  
Germany, 7 cks. F.

**Manganese**—  
Australia, 11 t. Ha

**Manure**—  
Germany, 85 t. E.  
Holland, 10 Chemical  
" 1 cs. Londo

**Methyl Alcohol**—  
Belgium, 28 dms. Lister  
" 2 McNam  
Germany, 1 cs. Lister

**Mica**—  
E. Indies, £832 W. M. Smith  
U. States, 60 C. W.

**Molasses**—  
U. States, 120 cks. 670 c. I.  
" 400 400  
" 5,000 5,000  
Holland, 40 50 J. Bar  
France, 100 100 G. Ch  
Egypt, 40,340 J. R

**Naphtha**—  
U. States, 5 4 Beck & Co.

**Ochre**—  
Belgium, 11 dms. Lea  
France, 51 cks. T. C.  
Holland, 37 pks. 1 cs. "

**Phosphate**—  
Belgium, 50 t. Anglo-Contl.  
France, 444 A. Hun  
" 300 T. Farn

**Phosphate of Lime**—  
Belgium, 450 t. Anglo-Contl.  
France, 210 A. Hun

**Pitch**—  
Germany, 10 pks. H.

**Plumbago**—  
Ceylon, 204 cks. C. Ro  
" 30 Douth  
" 16 R. G. H  
Germany, 57 B.  
Ceylon, 788 J. Thredder, S.  
" 196 N.  
Germany, 3 Cray

**Potash**—  
Germany, 1 ck. L. & I. D. Jt. Co.  
France, 1 H. Walbaum  
Belgium, 21 brls. May

**Potassium Carbonate**—  
France, 12 cks.



**Alum Chlorate**—  
40 cks. J. W. Drysdale & Co.

**Alum Nitrate**—  
11 cks. Anderson, Weber, & Co.

**Ce Stone**—  
6 t. G. W. Largent

**silver**—  
100 flks. H. Bath & Son

**ates**, 800 brls. F. & S. Chiesman & Co.

**1,767** T. Nickels & Co.

**600** Williams, Torrey, & Co.

**etre**—  
15 cks. J. Owen

**and**, 15 G. Boor & Co.

**any**, 236 P. Hecker & Co.

**2** L. & I. D. Jt. Co.

**ies**, 1,269 bgs. C. Wimple & Co.

**4,907** Lucas & Spencer's Wf. Co.

**and**, 1,000 bgs. R. Waters

**m Acetate**—  
27 cks. H. Lorenz

**m Carbonate**—  
10 cks. J. Barber & Co.

**m Prussiate**—  
21 brls. D. C. Thomas & Sons

**h**—  
230 cs. F. Claydon & Co.

**128** Leach & Co.

**ates**, 2 Pickford & Co.

**and**, 100 G. Rahn & Co.

**110** Philipps & Graves

**um**, 80 Sawyer, Sons, & Co.

**and**, 1,313 Little & Johnston

**um**, 160 T. H. Lee

**any**, 40 Philipps & Graves

**ates**, 100 bgs. R. G. Hall & Co.

**ine**—  
100 bgs. Walbaum & Tosetti

**um**, 63 C. S. Lovell

**ur**—  
100 t. Johnson & Hooper

**50** A. Hunter & Co.

**10** J. T. Morton

**4** H. W. Ison

**ric Acid**—  
11 cks. F. C. Devon & Co.

**48** B. & F. Wf. Co.

**10** Beck & Pollitzer

**ates**, 35 cks. W. J. Groves

**and**, 21 Kirkpatrick, Barr, & Co.

**um**, 6 drs. Petri Brs.

**marine**—  
8 pks. H. Brooks & Co.

**24** cks. T. Hamilton

**um**, 1 70 brls. Leach & Co.

**any**, 12 pks. Steinhoff, Sons, & Co.

**and**, 1 cs. W. Harrison & Co.

**6** pks. Philipps & Graves

**10** W. H. Carey & Sons

**sh**—  
41 pks. Pinchin, Johnson, & Co.

**any**, 2 T. H. Lee

**ates**, 6 Dawson Brs.

**7** Flageollet & Co.

**ilion**—  
20 cs. City Coml. Wf. Ltd.

**Salt**—  
10 t. T. H. Lee

**Lead**—  
16 cks. J. L. Lyon & Co.

**Pulp**—  
1,100 pks. Henderson, Craig, & Co.

**nd**, 33 Thames S. T. & L. Co.

**ay**, 700 W. E. Bott & Co.

**16** Christophersen & Co.

**240** W. G. Taylor & Co.

**156** Christophersen, Andrews, & Co.

**3,692** Moreton Cox Brs

**ark**, 24 Johnsen & Jorgensen

**any**, 163 O. Herrlich

**xide**—  
500 cks. Soundy & Sons

**125** brls. M. Ashby, Ltd.

**any**, 18 cks. Beresford & Co.

**ies**, 100 brls. M. Ashby, Ltd.

**White**—  
10 cks. G. Rahn & Co.

## LIVERPOOL.

Week ending March 19th.

**Acetate of Lime**—  
New York, 3,020 bgs.

**Acetic Acid**—  
Rouen, 2 cs. R. Bulman & Co.

**Rotterdam**, 10 balloons

**Aluminous Cake**—  
Rotterdam, 56 cks.

**Ammonium Chloride**—  
Antwerp, 8 brls.

**Asbestos**—  
Boston, 20 bgs.

**Bone Meal**—  
Bombay, 3,000 bgs.

**Borate of Lime**—  
Antofagasta, 15,811 bgs.

**Borax**—  
Mollendo, 1,734 sks.

**Castor Oil**—  
Marseilles, 30 brls. 51 cs.

**Colours**—  
Rotterdam, 1 cs.

**Antwerp**, 1 brl.

**Cottonseed Oil**—  
New York, 50 brls.

**Dextrine**—  
Hamburg, 100 bgs.

**Dyestuffs**—  
**Argols**  
Oporto, 46 cks. German Bank of London

**Cutch**  
Rangoon, 3,649 bks.

**Extracts**  
Philadelphia, 75 brls.

**Hamburg**, 100 bgs.

**Marseilles**, 200

**Fustic**  
New York, 2,140 ps. B. Ackerley & Son

**Baltimore**, 2,047 sticks R. B. Watson & Co.

**Logwood**  
Castries, St. Lucia, 210 t. Gillespie Brs. & Co.

**Laguna**, 1,800 quintals

**Hamburg**, 136 logs

**Havre**, 100 t.

**Myrabolams**  
Bombay, 1,424 bgs.

**1,334** D. Sassoon & Co.

**Shumac**  
Palermo, 2,010 bgs.

**100** J. Kitchin & Co.

**Yalonia**  
Patras, 219 bgs.

**Farina**—  
Fiume, 100 bgs. A. Baumann & Co.

**100**

**Glucose**—  
New York, 350 brls. T. M. Duche & Sons

**100**

**Glue**—  
Genoa, 9 brls. W. N. Newman & Co.

**Rouen**, 10 cks. Co-op. W'sale Society, Ltd.

**Antwerp**, 12 46 cs.

**Marseilles**, 8

**Lead Acetate**—  
Rotterdam, 24 brls.

**Limestone**—  
Rouen, 37 cks. 1 crt. R. J. Francis & Co.

**Antwerp**, 7 cs. 3 J. T. Fletcher & Co.

**1**

**Manganese Ore**—  
Huelva, 1,200 t. Darwen & Mostyn Iron Co.

**Rivadesella**, 193

**Manure**—  
Philadelphia, 135 bgs.

**Antwerp**, 120 J. T. Fletcher & Co.

**Mica**—  
New York, 8 pks.

**Mineral White**—  
Genoa, 100 bgs. A. Baumann & Co.

**Fiume**, 100

**30**

## NITRATE—

Iquique, 783 bgs. Balfour Williamson

**15,332**

**Ochre**—  
Bordeaux, 20 cks.

**Marseilles**, 19 J. J. Lyon & Co.

**Paint**—  
Philadelphia, 3 kgs.

**Alexandria**, 1 cs.

**Hamburg**, 20 5 cks. 30 dms.

**Trieste**, 1 pk. Suter, Hartmann & Co.

**Paraffin Scale**—  
Philadelphia, 103 brls.

**Pitch**—  
Boston, 4 brls. Musson & Co.

**Potash**—  
Dunkirk, 4 dms. 23 cks.

**Pumice Stone**—  
Messina, 70 bgs.

**Pyrites**—  
Huelva, 3,578 t. Matheson & Co.

**Rosin**—  
Boston, 1,500 brls.

**Soap**—  
New York, 2 cs. Burroughs Wellcome

**300** brls. 24 pks. J. Yates

**St. John**, 50 bks.

**Naples**, 240

**Marseilles**, 710 bks.

**Newport News**, 360

**Philadelphia**, 3

**Sodium Nitrate**—  
Antofagasta, 2,850 bgs. Lafuente, Walker & Co.

**Pisagua**, 10,450

**Starch**—  
Baltimore, 200 bgs.

**New York**, 200

**Rotterdam**, 66 cs.

**New York**, 400 T. M. Duche & Co.

**Stearine**—  
New York, 51 hds.

**Sulphur Ore**—  
Huelva, 1,697 t.

**Sulphuric Acid**—  
Rouen, 1 cs. R. Bulman & Co.

**Tallow**—  
New York, 250 tcs. W'sale Co-op. Society, Ltd.

**500** hds.

**125** brls.

**Philadelphia**, 380

**Campana**, 150 cks.

**La Plata**, 115 W. B. Dickinson

**Alexandria**, 1

**San Francisco**, 444 brls.

**Tartar**—  
Bordeaux, 17 cks.

**Tartaric Acid**—  
Messina, 8 cks.

**Marseilles**, 6

**Treacle**—  
Philadelphia, 203 brls.

**Yarnish**—  
New York, 4 brls. R. A. Warren

**Antwerp**, 1 kg.

**Waste Salt**—  
Hamburg, 102 bgs.

**White Lead**—  
Ghent, 1 brl. J. T. Fletcher & Co.

**Rotterdam**, 79 cks.

**Wood Pulp**—  
Philadelphia, 1 bx.

**Rotterdam**, 106 bls.

**Zinc Oxide**—  
Rotterdam, 40 cks.

**Antwerp**, 45

**Zinc White**—  
Rotterdam, 175 cks.

## ALUMINOUS CAKE—

Rotterdam, 98 cks.

**Bone Ash**—  
M. Video, 1,319 t. J. Gordon & Co.

**Colours**—  
Hamburg, 3 cks.

**Rotterdam**, 5 bks.

**Extracts**—  
Nantes, 100 cks. J. & P. Hutchison

**Treport**, 43

**Farina**—  
Hamburg, 40 bgs.

**Stettin**, 1,560

**1,800** Browne, Geveke, & Co.

**Glue**—  
Rotterdam, 20 bgs.

**Treport**, 60 bls.

**Lead Acetate**—  
Stettin, 6 cks.

**Limestone**—  
Antwerp, 1 cs. J. T. Fletcher & Co.

**4** 1 crt.

**Logwood**—  
Laguna, 450 t.

**St. Croix**, 145

**B River, Jam.**, 474

**Pitch**—  
Marseilles, 94 cks. J. & P. Hutchison

**Potash**—  
Hamburg, 48 cks.

**Treport**, 18

**Shumac**—  
Palermo, 120 bgs. 500 bls.

**Soap**—  
Treport, 1 ck.

**Starch**—  
Hamburg, 20 cks.

**Antwerp**, 20 cs.

**Ghent**, 128

**Tallow**—  
Rotterdam, 2 cs.

**Wood Pulp**—  
Hamburg, 420 pks.

**Zinc Oxide**—  
Rotterdam, 25 brls.

## HULL.

Week ending March 21st.

**Acids**—  
Rotterdam, 2 cks. W. & C. L. Ringrose

**Barytes**—  
Rotterdam, 92 cks. Hutchinson & Son

**20** bgs. Wilson, Sons, & Co., Ltd.

**Antwerp**, 52 cks.

**65** 50 bgs. Bailey & Leetham

**33** H. F. Pudsey

**Bone Meal**—  
Kurrachee, 1,000 bgs.

**Bombay**, 7,714

**Castor Oil**—  
New York, 100 brls. Wilson, Sons, & Co., Ltd.

**Chemicals (otherwise unaes.)**—  
Antwerp, 23 pks. Wilson, Sons, & Co., Ltd.

**Gothenburg**, 4 cs.

**Stettin**, 3 cks.

**Bremen**, 4 cs. Veltmann & Co.

**New York**, 50 cyldrs.

**Dunkirk**, 41 pks. Wilson, Sons, & Co., Ltd.

**Cod Oil**—  
Drontheim, 1 brl. Wilson, Sons, & Co., Ltd.

**Christiansund**, 11

**Aalesund**, 104

**Colours**—  
Rotterdam, 2 cks. Hutchinson & Son

**50** pks. 11 bks. 16 brls. W. & C. L. Ringrose

**Antwerp**, 22 1 ck. Wilson, Sons, & Co., Ltd.

**Hamburg**, 5 cs. G. Malcolm & Son

**Stettin**, 20 cks. Wilson, Sons, & Co., Ltd.

**30**

## MANCHESTER.

Week ending March 21st.

**Acetic Acid**—  
Rotterdam, 30 blns.



|                       |       |                                 |
|-----------------------|-------|---------------------------------|
| Antwerp,              | 1     | J. W. Davis & Son               |
| "                     | 1     | A. Sanderson & Co.              |
| "                     | 1     | cs. Storry, Witry, & Co.        |
| Bremen,               | 13    | cks. J. Pyefinch & Co.          |
| Hamburg,              | 5     |                                 |
| <b>Cryolite</b> —     |       |                                 |
| Copenhagen,           | 5     | cks. Wilson, Sons, & Co., Ltd.  |
| <b>Dyestuffs</b> —    |       |                                 |
| Alizarine             |       |                                 |
| Rotterdam,            | 29    | brls. W. & C. L. Ringrose       |
| <b>Gutch</b>          |       |                                 |
| Bombay,               | 200   | bxs. Wilson, Sons, & Co., Ltd.  |
| <b>Indigo</b>         |       |                                 |
| Bremen,               | 9     | bgs. Wilson, Sons, & Co., Ltd.  |
| <b>Madder</b>         |       |                                 |
| Rotterdam,            | 7     | cks. W. & C. L. Ringrose        |
| <b>Shumac</b>         |       |                                 |
| Trieste,              | 40    | bls. Wilson, Sons, & Co., Ltd.  |
| Palermo,              | 675   | bgs. "                          |
| <b>Farina</b> —       |       |                                 |
| Ghent,                | 222   | cs. Wilson, Sons, & Co., Ltd.   |
| Stettin,              | 700   | bgs. "                          |
| Antwerp,              | 1     | bl. Bailey & Leatham            |
| Harlingen,            | 200   | Hutchinson & Son                |
| <b>Glucose</b> —      |       |                                 |
| Stettin,              | 300   | bgs. Wilson, Sons, & Co., Ltd.  |
| "                     |       |                                 |
| Amsterdam,            | 50    | Hutchinson & Son                |
| New York,             | 150   | brls. Wilson, Sons, & Co., Ltd. |
| "                     | 325   | 250 bgs. "                      |
| <b>Glue</b> —         |       |                                 |
| Antwerp,              | 5     | cks. Wilson, Sons, & Co., Ltd.  |
| Rouen,                | 26    | 44 bls. Rawson & Robinson       |
| <b>Kaolin</b> —       |       |                                 |
| Amsterdam,            | 20    | cks. Reckitt & Sons             |
| <b>Lamp Black</b> —   |       |                                 |
| Antwerp,              | 100   | cks. Bailey & Leatham           |
| <b>Lead Acetate</b> — |       |                                 |
| Hamburg,              | 1     | cs. "                           |
| <b>Naphtha</b> —      |       |                                 |
| Reval,                | 1     | ck. Bailey & Leatham            |
| <b>Paint</b> —        |       |                                 |
| New York,             | 72    | cs. Wilson, Sons, & Co., Ltd.   |
| <b>Phosphate</b> —    |       |                                 |
| Antwerp,              | 100   | l. Wilson, Sons, & Co., Ltd.    |
| Ghent,                | 1,212 | bgs. 80 t. "                    |
| <b>Pitch</b> —        |       |                                 |
| Rotterdam,            | 10    | cks. Hutchinson & Son           |
| "                     | 6     | W. & C. L. Ringrose             |
| Amsterdam,            | 13    | " "                             |
| "                     | 13    | " Wilson, Sons, & Co., Ltd.     |
| <b>Pumice Stone</b> — |       |                                 |
| Messina,              | 53    | pks. Wilson, Sons, & Co., Ltd.  |
| <b>Salt</b> —         |       |                                 |
| Hamburg,              | 10    | cks. "                          |
| <b>Saltpetre</b> —    |       |                                 |
| Hamburg,              | 10    | kgs. Wilson, Sons, & Co., Ltd.  |
| "                     | 28    | cks. 35 bgs. E. & H. Allison    |
| <b>Soap</b> —         |       |                                 |
| Bari,                 | 10    | cs. Wilson, Sons, & Co., Ltd.   |
| New York,             | 1,500 | bxs. "                          |
| Newport,              | 80    | brls. "                         |
| <b>Starch</b> —       |       |                                 |
| Amsterdam,            | 40    | cs. Hutchinson & Son            |
| Antwerp,              | 160   | Bailey & Leatham                |
| Bremen,               | 2,734 | pks. Veltmann & Co.             |
| New York,             | 12    | cs. Wilson, Sons, & Co., Ltd.   |
| Amsterdam,            | 140   | W. & C. L. Ringrose             |
| <b>Stearine</b> —     |       |                                 |
| Antwerp,              | 135   | bgs. Wilson, Sons, & Co., Ltd.  |
| <b>Sulphur</b> —      |       |                                 |
| Catania,              | 149   | pks. Wilson, Sons, & Co., Ltd.  |
| "                     | 1,000 | bgs. 50 t. "                    |

|                      |       |                                     |
|----------------------|-------|-------------------------------------|
| <b>Tallow</b> —      |       |                                     |
| Dunkirk,             | 10    | cks. Wilson, Sons, & Co., Ltd.      |
| <b>Treacle</b> —     |       |                                     |
| Stettin,             | 1     | ck. Wilson, Sons, & Co., Ltd.       |
| New York,            | 394   | brls. "                             |
| <b>Ultramarine</b> — |       |                                     |
| Rotterdam,           | 1     | ck. "                               |
| Bremen,              | 20    |                                     |
| <b>Varnish</b> —     |       |                                     |
| Antwerp,             | 1     | ck. 1 cs. Wilson, Sons, & Co., Ltd. |
| New York,            | 5     | brls. "                             |
| <b>Waste Salt</b> —  |       |                                     |
| Hamburg,             | 815   | bgs. Wilson, Sons, & Co., Ltd.      |
| "                    | 38    | Bailey & Leatham                    |
| <b>White Lead</b> —  |       |                                     |
| Ghent,               | 4     | cks. "                              |
| Rotterdam,           | 102   | Hutchinson & Son                    |
| Amsterdam,           | 11    | W. & C. L. Ringrose                 |
| <b>Wolfram</b> —     |       |                                     |
| Hamburg,             | 10    | cs. Wilson, Sons, & Co., Ltd.       |
| <b>Wood Pulp</b> —   |       |                                     |
| Christiania,         | 1,151 | pks. Wilson, Sons, & Co., Ltd.      |
| <b>Zinc Oxide</b> —  |       |                                     |
| Antwerp,             | 25    | cks. Bailey & Leatham               |
| <b>Zinc White</b> —  |       |                                     |
| Rotterdam,           | 10    | cks. W. & C. L. Ringrose            |

## GLASGOW.

Week ending March 26th.

|                                          |       |                                            |
|------------------------------------------|-------|--------------------------------------------|
| <b>Alum</b> —                            |       |                                            |
| Hamburg,                                 | 67    | cks. "                                     |
| <b>Alumina Sulphate</b> —                |       |                                            |
| Rotterdam,                               | 44    | cks. J. Rankine & Son                      |
| <b>Antimony Salt</b> —                   |       |                                            |
| Hamburg,                                 | 1     | ck. "                                      |
| <b>Arachide Oil</b> —                    |       |                                            |
| Rotterdam,                               | 4     | cks. J. Rankine & Son                      |
| <b>Barium Chloride</b> —                 |       |                                            |
| Rotterdam,                               | 4     | cks. J. Rankine & Son                      |
| <b>Barytes</b> —                         |       |                                            |
| Hamburg,                                 | 62    | cks. "                                     |
| Rotterdam,                               | 59    | J. Rankine & Son                           |
| <b>Bone Meal</b> —                       |       |                                            |
| Bombay,                                  | 2,992 | bgs. "                                     |
| <b>Castor Oil</b> —                      |       |                                            |
| Marseilles,                              | 124   | brls. "                                    |
| Antwerp,                                 | 29    | cks. "                                     |
| <b>Chemicals (otherwise undescribed)</b> |       |                                            |
| Rotterdam,                               | 10    | pks. J. Rankine & Son                      |
| <b>Chrome Ore</b> —                      |       |                                            |
| Macri,                                   | 2,050 | l. J. & J. White                           |
| Derindji,                                | 1,700 | Cowan & Kinghorn                           |
| <b>Colours</b> —                         |       |                                            |
| Rotterdam,                               | 101   | pks. "                                     |
| "                                        | 2     | cs. 5 bxs. 4 brls. 4 cks. J. Rankine & Son |
| <b>Cottonseed Oil</b> —                  |       |                                            |
| Baltimore,                               | 60    | brls. "                                    |
| <b>Dyestuffs</b> —                       |       |                                            |
| Alizarine                                |       |                                            |
| Rotterdam,                               | 126   | pks. Wilson, Sons, & Co., Ltd.             |
| "                                        | 11    | brls. J. Rankine & Son                     |
| <b>Argols</b>                            |       |                                            |
| Bordeaux,                                | 48    | cks. "                                     |
| <b>Extracts</b>                          |       |                                            |
| Antwerp,                                 | 2     | cs. "                                      |
| <b>Logwood</b>                           |       |                                            |
| St. John, N.B.,                          | 1,490 | pks. "                                     |
| Jamaica,                                 | 414   | l. 19 c. Mucklow & Co.                     |
| <b>Black River</b>                       |       |                                            |
| Marseilles,                              | 499   | Mucklow & Co.                              |
| <b>Madder</b>                            |       |                                            |
| Marseilles,                              | 6     | brls. "                                    |
| <b>Myrabolams</b>                        |       |                                            |
| Bombay,                                  | 680   | bgs. "                                     |
| <b>Shumac</b>                            |       |                                            |
| Palermo,                                 | 450   | bgs. 100 bls. "                            |
| Seville,                                 | 2     |                                            |
| <b>Yalonia</b>                           |       |                                            |
| Smyrna,                                  | 400   | l. Jas. Bunters & Co.                      |
| <b>Farina</b> —                          |       |                                            |
| Hamburg,                                 | 600   | bgs. "                                     |
| <b>Gelatine</b> —                        |       |                                            |
| Rouen,                                   | 5     | cs. "                                      |
| Hamburg,                                 | 5     |                                            |

|                                     |       |                              |
|-------------------------------------|-------|------------------------------|
| <b>Glucose</b> —                    |       |                              |
| Newport News,                       | 250   | brls. Wm. Bunters & Co.      |
| New York,                           | 501   |                              |
| Newport News,                       | 750   |                              |
| <b>Glue</b> —                       |       |                              |
| Fiume,                              | 100   | bgs. "                       |
| Hamburg,                            | 60    |                              |
| Rouen,                              | 44    | cks. 40 cs. J. Rankine & Son |
| Rotterdam,                          | 40    | bgs. "                       |
| <b>Gypsum</b> —                     |       |                              |
| Rouen,                              | 500   | bgs. "                       |
| <b>Infusorial Earth</b> —           |       |                              |
| Hamburg,                            | 161   | bgs. "                       |
| <b>Ochre</b> —                      |       |                              |
| Marseilles,                         | 23    | bgs. "                       |
| Alicante,                           | 27    | brls. "                      |
| <b>Painters' Colours</b> —          |       |                              |
| Antwerp,                            | 3     | cks. 5 cs. "                 |
| <b>Paraffin Wax</b> —               |       |                              |
| Baltimore,                          | 270   | brls. "                      |
| <b>Phosphate of Lime and Rock</b> — |       |                              |
| Antwerp,                            | 510   | bgs. "                       |
| <b>Phosphate Rock</b> —             |       |                              |
| Antwerp,                            | 1,000 | bgs. "                       |
| <b>Plumbago</b> —                   |       |                              |
| Genoa,                              | 250   | bgs. "                       |
| <b>Pumice Stone</b> —               |       |                              |
| Messina,                            | 4     | cks. "                       |
| <b>Pyrites</b> —                    |       |                              |
| Huelva,                             | 2,133 | l. Tharsis Co.               |
| <b>Rosin</b> —                      |       |                              |
| New York,                           | 100   | brls. "                      |
| <b>Soap</b> —                       |       |                              |
| Fiume,                              | 136   | cs. "                        |
| Marseilles,                         | 2     |                              |
| Rotterdam,                          | 4     | J. Rankine & Son             |
| <b>Soda</b> —                       |       |                              |
| Rotterdam,                          | 18    | brls. J. Rankine & Son       |
| <b>Starch</b> —                     |       |                              |
| St. John, N.B.,                     | 25    | bxs. 80 cs. "                |
| Antwerp,                            | 200   | sks. "                       |
| New York,                           | 75    | bgs. "                       |
| Fiume,                              | 25    | J. Rankine & Son             |
| Rotterdam,                          | 25    |                              |
| <b>Sulphur</b> —                    |       |                              |
| Palermo,                            | 200   | bgs. "                       |
| <b>Talc</b> —                       |       |                              |
| Genoa,                              | 50    | bgs. "                       |
| <b>Tallow</b> —                     |       |                              |
| New York,                           | 25    | tierces                      |
| <b>Tartar</b> —                     |       |                              |
| Bordeaux,                           | 22    | cks. "                       |
| <b>Tartaric Acid</b> —              |       |                              |
| Marseilles,                         | 10    | brls. "                      |
| Messina,                            | 12    | cks. "                       |
| <b>Treacle</b> —                    |       |                              |
| Boston,                             | 165   | brls. "                      |
| Drontheim,                          | 10    |                              |
| <b>Waste Salt</b> —                 |       |                              |
| Hamburg,                            | 599   | l. 503 bgs. "                |
| <b>White Lead</b> —                 |       |                              |
| Antwerp,                            | 4     | cks. "                       |
| Rotterdam,                          | 150   | J. Rankine & Son             |
| <b>Wood Pulp</b> —                  |       |                              |
| Christiania,                        | 951   | bls. "                       |
| Fiume,                              | 408   |                              |
| Drontheim,                          | 2,000 |                              |
| <b>Zinc Oxide</b> —                 |       |                              |
| Hamburg,                            | 1     | ck. "                        |
| Antwerp,                            | 25    |                              |
| New York,                           | 50    | brls. "                      |
| <b>Zinc White</b> —                 |       |                              |
| Rotterdam,                          | 20    | cks. J. Rankine & Son        |
| "                                   | 50    |                              |

## TYNE.

Week ending March 21st.

|                     |    |                     |
|---------------------|----|---------------------|
| <b>Alum Earth</b> — |    |                     |
| Hamburg,            | 17 | cks. Tyne S. S. Co. |
| <b>Barytes</b> —    |    |                     |
| Rotterdam,          | 90 | cks. Tyne S. S. Co. |
| <b>Cod Oil</b> —    |    |                     |
| Trondhjem,          | 9  | brls. "             |
| <b>Cryolite</b> —   |    |                     |
| Copenhagen,         | 1  | ck. "               |
| <b>Farina</b> —     |    |                     |
| Hamburg,            | 50 | bgs. Tyne S. S. Co. |
| <b>Glue</b> —       |    |                     |
| Rotterdam,          | 3  | cks. Tyne S. S. Co. |

|                     |       |                     |
|---------------------|-------|---------------------|
| <b>Kieselguhr</b> — |       |                     |
| Bergen,             | 102   | bgs. "              |
| <b>Saltpetre</b> —  |       |                     |
| Hamburg,            | 20    | cks. Tyne S. S. Co. |
| <b>Wood Pulp</b> —  |       |                     |
| Gothenburg,         | 324   | bls. "              |
| Arendal,            | 1,000 |                     |

## GOOLE.

Week ending March 18th.

|                                          |       |                     |
|------------------------------------------|-------|---------------------|
| <b>Alizarine</b> —                       |       |                     |
| Rotterdam,                               | 29    | brls. "             |
| <b>Alkali</b> —                          |       |                     |
| Calais,                                  | 5     | cks. "              |
| <b>Alum</b> —                            |       |                     |
| Rotterdam,                               | 6     | cks. "              |
| <b>Ammonium Sulphate</b> —               |       |                     |
| Rotterdam,                               | 12    | cks. "              |
| <b>Antimony</b> —                        |       |                     |
| Boulogne,                                | 1     | ck. "               |
| <b>Barytes</b> —                         |       |                     |
| Antwerp,                                 | 25    | cks. 200 bgs. "     |
| <b>Caoutchouc</b> —                      |       |                     |
| Boulogne,                                | 5     | cks. 7 pks. "       |
| <b>Colours</b> —                         |       |                     |
| Hamburg,                                 | 8     | cks. 3 cs. "        |
| Ghent,                                   | 22    |                     |
| Amsterdam,                               | 2     |                     |
| <b>Dyestuffs (otherwise undescribed)</b> |       |                     |
| Rotterdam,                               | 277   | cks. 25 cs. "       |
| Boulogne,                                | 22    | 1 15 pks. "         |
| Antwerp,                                 | 4     |                     |
| <b>Extracts</b> —                        |       |                     |
| Rouen,                                   | 10    | cks. "              |
| <b>Farina</b> —                          |       |                     |
| Harlingen,                               | 100   | bgs. "              |
| <b>Logwood</b> —                         |       |                     |
| Progresso,                               | 395   | l. "                |
| Monte Christe,                           | 482   |                     |
| Campachy,                                | 520   |                     |
| Belize,                                  | 1,945 |                     |
| Jamaica,                                 | 1,351 |                     |
| <b>Plumbago</b> —                        |       |                     |
| Boulogne,                                | 5     | cs. "               |
| <b>Potash</b> —                          |       |                     |
| Dunkirk,                                 | 30    | dms. 8 "            |
| <b>Saltpetre</b> —                       |       |                     |
| Hamburg,                                 | 25    | cks. 170 bgs. 100 " |
| <b>Soap</b> —                            |       |                     |
| Rotterdam,                               | 3     | cs. "               |
| <b>Starch</b> —                          |       |                     |
| Ghent,                                   | 110   | cs. "               |
| <b>Waste Salt</b> —                      |       |                     |
| Hamburg,                                 | 140   | l. "                |
| <b>Wood Pulp</b> —                       |       |                     |
| Rotterdam,                               | 79    | bls. "              |

## GRIMSBY.

Week ending March 21st.

|                                          |     |                      |
|------------------------------------------|-----|----------------------|
| <b>Albumen</b> —                         |     |                      |
| Hamburg,                                 | 5   | cks. "               |
| <b>Barytes</b> —                         |     |                      |
| Rotterdam,                               | 24  | cks. "               |
| <b>Caoutchouc</b> —                      |     |                      |
| Rotterdam,                               | 3   | cs. "                |
| Antwerp,                                 | 1   |                      |
| Hamburg,                                 | 1   | 3 pkgs. "            |
| <b>Chemicals (otherwise undescribed)</b> |     |                      |
| Rotterdam,                               | 7   | cks. "               |
| Hamburg,                                 | 7   | cs. "                |
| <b>Colours</b> —                         |     |                      |
| Antwerp,                                 | 2   | cks. 5 cs. 5 pkgs. " |
| Hamburg,                                 | 6   | 2 28 "               |
| <b>Dyes</b> —                            |     |                      |
| Rotterdam,                               | 10  | cks. 10 pkgs. "      |
| Hamburg,                                 | 44  | 3 cs. 44 "           |
| <b>Farina</b> —                          |     |                      |
| Hamburg,                                 | 100 | bgs. "               |
| <b>Size</b> —                            |     |                      |
| Antwerp,                                 | 9   | pkgs. "              |
| Hamburg,                                 | 10  | bgs. "               |
| <b>Starch</b> —                          |     |                      |
| Antwerp,                                 | 60  | cs. "                |
| <b>Wood Pulp</b> —                       |     |                      |
| Malmo,                                   | 640 | bls. "               |



EXPORTS OF CHEMICAL PRODUCTS

OF

THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON.

Week ending March 25th.

|                             |               |           |
|-----------------------------|---------------|-----------|
| dam,                        | 5 t.          | £30       |
|                             | 3 c.          | 13        |
| de,                         | 2 t.          | £12       |
| nia (Liquid)—               |               |           |
| town,                       | 1 t. 2 cks.   | £69       |
| ie,                         | 30 cydls.     | 147       |
|                             | 5 cs.         | 16        |
| urne,                       | 2 c.          | 11        |
| ium Carbonate—              |               |           |
| ork,                        | 8 t. 13 c.    | £360      |
| rk,                         | 10            | 17        |
| ium Chloride—               |               |           |
|                             | 10 c.         | £17       |
| as,                         | 6             | 10        |
| urg,                        | 1 t. 1        | 40        |
| m,                          | 2             | 75        |
| urne,                       | 5             | 11        |
| un,                         | 10            | 18        |
| rp,                         | 3 cks.        | 23        |
| ium Nitrate—                |               |           |
|                             | 33 cks.       | £151      |
| ium Sulphate—               |               |           |
| rk,                         | 218 t. 4 c.   | £1,864    |
|                             | 203           | 1,700     |
| a,                          | 50            | 425       |
| lique                       | 12 5          | 130       |
| is,                         | 1             | 10        |
| rp,                         | 60            | 510       |
| n,                          | 100           | 850       |
| urg,                        | 182           | 1,511     |
| rdam,                       | 150           | 1,275     |
|                             | 300           | 2,570     |
| ia,                         | 146 9         | 1,272     |
| dam,                        | 50            | 425       |
| ic—                         |               |           |
| chee,                       | 1 t.          | £20       |
| ic Acid—                    |               |           |
| ork,                        | 1 t. 16 c.    | £70       |
| urne,                       | 8 kgs.        | 85        |
| rdam,                       | 5 c.          | £13       |
|                             | 20 kgs.       | 2         |
| rdam,                       | 10 cs.        | 12        |
| m Phosphide—                |               |           |
| ta,                         | 2 cs.         | £15       |
| ide,                        | 2             | 13        |
| a Bisulphide—               |               |           |
| urg,                        | 24 dms.       | £100      |
| c Potash—                   |               |           |
| ide,                        | 2 t.          | £37       |
| urne,                       | 2 3 c.        | 69        |
| c Soda—                     |               |           |
| Bay,                        | 2 t. 7 c.     | £100      |
| y,                          | 4 7           | 45        |
| elphia,                     | 130 11        | 980       |
| gton,                       | 5 5           | 30        |
|                             | 20 dms.       | 10        |
| urne,                       | 12 16         | 178       |
| it,                         | 5 5           | 39        |
| ndon,                       | 1 19          | 54        |
| als (otherwise undescribed) |               |           |
| and,                        | 3 kgs. 1 brl. | £32       |
| gton,                       | 4 pkgs.       | 21        |
| ide,                        | 24 crts.      | 30 cs. 46 |
| rk,                         | 11 t. 10 c.   | 275       |
| ia,                         | 3             | 19        |
| gue,                        | 1             | 54        |
| rt,                         | 11 8          | 400       |
| Acid—                       |               |           |
| urg,                        | 1 ck. 12 kgs. | £109      |
| ay,                         | 1 1 cs        | 3         |
| Bay,                        | 1             | 6         |
| bolton,                     | 3             | 88        |
| ne,                         | 1 15          | 126       |
| rp,                         | 1             | 23        |
| ita,                        | 1             | 32        |
| ide,                        | 3             | 19        |
| Products—                   |               |           |
| arine                       |               |           |
| ork,                        | 25 cks.       | £305      |
| line Dyes                   |               |           |
| a,                          | 20 cks.       | £231      |
| line Oil                    |               |           |
| rk,                         | 5 dms.        | £180      |
| dam,                        | 10            | 40        |
| ork,                        | 32            | 1,150     |
| line Salts                  |               |           |
| rdam,                       | 22 cks.       | £160      |
| hracene                     |               |           |
| ldorf,                      | 225 cks.      | £1,342    |

|                      |                    |                          |
|----------------------|--------------------|--------------------------|
| Cologne,             | 30                 | 125                      |
| Rotterdam,           | 191                | 492                      |
| Benzol               |                    |                          |
| Hamburg,             | 10 cks. 5 runs.    | £137                     |
| Rotterdam,           | 123 15 dms. 9 pns. | 1,104                    |
| 43 cks. 18 pipes     |                    |                          |
| Carbolic Acid        |                    |                          |
| Treport,             | 40 dms.            | £270                     |
| Los Angeles,         | 3 cks. 20 cs.      | 121                      |
| Newport News,        | 32                 | 219                      |
| Boston,              | 10                 | 59                       |
| Coal Tar Dyes        |                    |                          |
| Boston,              | 1 cks.             | £109                     |
| Creosote             |                    |                          |
| New York,            | 5 cks. 1,500 brls. | £837                     |
| Dieppe,              | 40 10              | 123                      |
| N. Orleans,          | 4,999              | 2,260                    |
| Creosote Oil         |                    |                          |
| Treport,             | 36 cks.            | £82                      |
| Creosote Salts       |                    |                          |
| Cologne,             | 1,514 bgs.         | £210                     |
| Naphtha              |                    |                          |
| Treport,             | 50 brls. 60 cks.   | £268                     |
| Naphthaline          |                    |                          |
| Marseilles,          | 55 cks. 40 bgs.    | £112                     |
| Treport,             | 40 10              | 58                       |
| Hamburg,             | 100                | 50                       |
| New York,            | 88                 | 98                       |
| Pitch                |                    |                          |
| Dunkirk,             | 1,070 t.           | £1,731                   |
| Melbourne,           | 15 frkns.          | 10                       |
| Dieppe,              | 170                | 298                      |
| Boston,              | 93 bgs.            | 1,000 cks. 150 brls. 676 |
| B. Ayres,            | 30 14              | 105                      |
| N. Orleans,          | 808                | 1,360                    |
| Brindisi,            | 15 runs.           | 11                       |
| Madras,              | 1,277              | 2,851                    |
| Marseilles,          | 800                | 1,480                    |
| Antwerp,             | 145                | 265                      |
| Hochfeld,            |                    |                          |
| Tar                  |                    |                          |
| Sydney,              | 100 dms. 2 cks.    | £20                      |
| Tar Oil              |                    |                          |
| Dunkirk,             | 25 cks.            | £55                      |
| Toluol               |                    |                          |
| Amsterdam,           | 50 cks.            | £217                     |
| Copper Sulphate—     |                    |                          |
| Odessa,              | 18 t. 13 c.        | £300                     |
| Lisbon,              | 50                 | 804                      |
| Mauritius,           | 1 2                | 19                       |
| Colombo,             | 2                  | 39                       |
| Seville,             | 2 19               | 48                       |
| Treport,             | 5                  | 80                       |
| Cream of Tartar—     |                    |                          |
| Port Darwin,         | 2 c.               | £11                      |
| Adelaide,            | 10                 | 52                       |
| Sydney,              | 1 t.               | 105                      |
| Wellington,          | 1 4                | 143                      |
| Fremantle,           | 1 3                | 126                      |
| Disinfectants—       |                    |                          |
| Demerara,            | 3 cks              | £15                      |
| Auckland,            | 5 brls.            | 11                       |
| Hamburg,             | 13 pkgs.           | 50 297                   |
| Melbourne,           | 14 30              |                          |
| Shanghai,            | 2 cs.              | 12                       |
| Bombay,              | 13 t. 5 c.         | 111                      |
| Hong Kong,           | 10                 | 70                       |
| Natal,               | 24                 | 68                       |
| Kalait—              |                    |                          |
| St. John,            | 10 t.              | £25                      |
| Magnesium Carbonate— |                    |                          |
| Melbourne,           | 10 cs.             | £10                      |
| Manure—              |                    |                          |
| Gothenburg,          | 68 t. 19 c.        | £15                      |
| Bordeaux,            | 11 12              | 13                       |
| Rouen,               | 120                | 40                       |
| Rocheport,           | 100                | 27                       |
| Martinique,          | 550 2              | 153                      |
| St. Lucia,           | 135 2              | 971                      |
| Trinidad,            | 301 12             | 1,655                    |
| Rotterdam,           | 154 12             | 453                      |
| Valencia,            | 553 10             | 2,892                    |
| Jersey,              | 226 1              | 1,707                    |
| Mercuric Oxide—      |                    |                          |
| Constantinople,      | 1 ck.              | £89                      |
| Nitrogen Protoxide—  |                    |                          |
| Hamburg,             | 1 cs.              | £40                      |
| Oxalic Acid—         |                    |                          |
| Seville,             | 5 brls.            | £19                      |
| Melbourne,           | 2 t. 3 c.          | 78                       |
| Phosphoric Acid—     |                    |                          |
| Mauritius,           | 49 t. 19 c.        | £792                     |
| Paris,               | 1                  | 40                       |
| Potassum Chlorate—   |                    |                          |
| Lisbon,              | 3 cs.              | £137                     |

Potassium Cyanide—

|                      |                    |       |
|----------------------|--------------------|-------|
| Townsville,          | 3 t. 19 c.         | £40   |
| Normanton,           | 1 7                | 15    |
| Algoa Bay,           | 1 2                | 14    |
| New York,            | 150 cs.            | 968   |
| Hong Kong,           | 3                  | 14    |
| Fremantle,           | 30                 | 438   |
| Rio de Janeiro,      | 20                 | 266   |
| Adelaide,            | 20                 | 290   |
| Potassium Prussiate— |                    |       |
| Boston,              | 36 cks.            | £627  |
| New York,            | 10 cs.             | 169   |
| Saltpetre—           |                    |       |
| Gibraltar,           | 15 t.              | £31   |
| Callao,              | 1 5 c.             | 3     |
| Colombo,             | 1 5                | 29    |
| Sydney,              | 2 10               | 57    |
| Bahia,               | 6                  | 131   |
| Adelaide,            | 2                  | 45    |
| Melbourne,           | 7 10               | 167   |
| Rio de Janeiro,      | 8                  | 10    |
| Vigo,                | 2 18               | 65    |
| Sheep Dip—           |                    |       |
| E. London,           | 4 t. 9 c.          | £188  |
| B. Ayres,            | 48 1               | 1,741 |
| Algoa Bay,           | 5,849 dms. 20 pks. | 1,185 |
| Calcutta,            | 62 dms.            | 47    |
| M. Video,            | 12 t. 5 c.         | 470   |
| Soda—                |                    |       |
| Shanghai,            | 1 t. 10 c.         | £6    |
| Victoria,            | 3                  | 9     |
| Soda Crystals—       |                    |       |
| Fremantle,           | 9 t. 19 c.         | £25   |
| Sodium Acetate—      |                    |       |
| Melbourne,           | 2 cks              | £13   |
| Sydney,              | 1 t. 12 c.         | 38    |
| Sodium Bicarbonate—  |                    |       |
| Natal,               | 3 t.               | £20   |
| Sodium Carbonate—    |                    |       |
| Adelaide,            | 10 c.              | £7    |
| Sodium Sulphate—     |                    |       |
| Ghent,               | 165 t.             | £275  |
| Strontium Nitrate—   |                    |       |
| Calcutta,            | 14 c.              | £20   |
| Sulphate of Lime—    |                    |       |
|                      | 1 t. 10 c.         | £30   |
| Sulphuric Acid—      |                    |       |
| Penang,              | 4 t. 12 c.         | £18   |
| Madras,              | 2 10               | 20    |
| Superphosphate—      |                    |       |
| Cherbourg,           | 230 t.             | £690  |
| Tartaric Acid—       |                    |       |
| Sydney,              | 15 c.              | £101  |
| Fremantle,           | 1 t. 3             | 163   |

LIVERPOOL.

Week ending March 25th.

|                     |              |      |
|---------------------|--------------|------|
| Acetic Acid—        |              |      |
| Lisbon,             | 19 c. 3 q.   | £15  |
| Albumen—            |              |      |
| New York,           | 2 t.         | £215 |
| Alum—               |              |      |
| San Francisco,      | 20 t.        | £100 |
| Sydney,             | 1            | 5    |
| Ancona,             | 3            | 15   |
| Portland, M.,       | 2 17 c. 2 q. | 16   |
| Santander,          | 2 4          | 10   |
| Algoa Bay,          | 12           | 5    |
| Galatz,             | 5 10 2       | 26   |
| Smyrna,             | 3 1          | 14   |
| Patras,             | 1 10 1       | 7    |
| Santos,             | 2            | 9    |
| Talcahuano,         | 3 5 2        | 15   |
| Ammonia Alkali—     |              |      |
| Bilbao,             | 39 t. 17 c.  | £86  |
| Ammonium Carbonate— |              |      |
| New York,           | 6 c. 1 q.    | £10  |
| Valparaiso,         | 1 t.         | 39   |
| Halifax,            | 3 1          | 74   |
| Ammonium Chloride—  |              |      |
| Yokohama,           | 1 t.         | £24  |
| San Francisco,      | 1 10 c.      | 34   |
| Melbourne,          | 1 6          | 30   |
| Galatz,             | 19 3 q.      | 39   |
| Lisbon,             | 1            | 28   |
| Antwerp,            | 1 11         | 64   |
| Rotterdam,          | 5 3 3        | 78   |
| New York,           | 5            | 100  |
| Patras,             | 7            | 12   |
| Ammonium Sulphate—  |              |      |
| New York,           | 75 t.        | £664 |
| San Francisco,      | 50           | 438  |

|                   |              |         |
|-------------------|--------------|---------|
| Las Palmas,       | 20           | 177     |
| Philadelphia,     | 51 9 c. 2 q. | 464     |
| Santander,        | 1 14 1       | 16      |
| Cullera,          | 203 10       | 1,707   |
| Valencia,         | 177 12 2     | 1,602   |
| Barium Chlorate—  |              |         |
| Hamburg,          | 1 t.         | £83     |
| Bleaching Powder— |              |         |
| Baltimore,        | 214 cks.     |         |
| Boston,           | 596          |         |
| Calcutta,         | 185 cs.      |         |
| Dunkirk,          | 18           |         |
| Genoa,            | 71           |         |
| Ghent,            | 69           |         |
| Halifax,          | 18 40 bxs.   |         |
| Montreal,         | 29           |         |
| Newport News,     | 230          |         |
| New York,         | 391 10 brls. |         |
| Rotterdam,        | 13           |         |
| Rouen,            | 87           |         |
| Tampico,          | 150          |         |
| Boracic Acid—     |              |         |
| Genoa,            | 10 c.        | £16     |
| Yokohama,         | 3 t.         | 2 q. 76 |
| New York,         | 1            | 20      |
| Rotterdam,        | 15           | 22      |
| Borax—            |              |         |
| Vera Cruz,        | 1 t. 7 c.    | £25     |
| St. John, N.B.,   | 5 15 2 q.    | 116     |
| Stettin,          | 2 5 1        | 46      |
| Gijon,            | 4 7          | 89      |
| Shanghai,         | 1 3 3        | 24      |
| Alexandria,       | 1 3 3        | 21      |
| Stockholm,        | 17 1         | 17      |
| Hamburg,          | 92 14 3      | 1,854   |
| Tampico,          | 3            | 17      |
| Fremantle,        | 5            | 5       |
| Rotterdam,        | 4 18 2       | 102     |
| Calcium Chloride— |              |         |
| Concordia,        | 4 t. 1 c.    | £9      |
| New York,         | 5 6          | 11      |
| Carbolic Acid—    |              |         |
| Hamburg,          | 10 c.        | £32     |
| Copenhagen,       | 3 2 q.       | 12      |
| Barcelona,        | 10           | 30      |
| Yokohama,         | 10 t. 8      | 641     |
| Vera Cruz,        | 2 2          | 7       |
| Genoa,            | 19 3         | 50      |
| Alexandria,       | 5            | 13      |
| New York,         | 14 15 4      | 617     |
| Venice,           | 4            | 17      |
| Rotterdam,        | 22           | 1,052   |
| Dunkirk,          | 4            | 210     |
| Austic Potash—    |              |         |
| Sydney,           | 2 t. 3 c.    | £60     |
| Boston,           | 10           | 11      |
| San Francisco,    | 3 9          | 101     |
| Halifax,          | 5 16         | 156     |
| New York,         | 10 19        | 289     |
| Caustic Soda—     |              |         |
| Alexandria,       | 40 dms.      |         |
| Alicante,         | 150          |         |
| Amsterdam,        | 6            |         |
| Baltimore,        | 375          |         |
| Bilbao,           | 35           |         |
| Bombay,           | 12           |         |
| Boston,           | 375 38 brls. |         |
| Brisbane,         | 26           | 10 bxs. |
| Cartagena, N.G.,  | 12           |         |
| East St. Louis,   | 250          |         |
| Fremantle,        | 10           |         |
| Galatz,           | 405          |         |
| Genoa,            | 148          |         |
| Halifax,          | 50 60 35     |         |
| Hamburg,          | 55 0         |         |
| Hio,              | 100          |         |
| Ibrail,           | 50           |         |
| Jaffa,            | 30           |         |
| La Guayra,        | 43           |         |
| Malaga,           | 10           |         |
| Malta,            | 15           |         |
| Manila,           | 100          |         |
| Melbourne,        | 32           |         |
| N. Orleans,       | 130          |         |
| Newport News,     | 100          |         |
| New York,         | 811 50       |         |
| Parahyba,         | 13           |         |
| Porto Alegre,     | 25           |         |
| Puerto Cabello,   | 8            |         |
| Rangoon,          | 15           |         |
| Rio de Janeiro,   | 30           |         |
| Rotterdam,        | 14 5         |         |
| San Francisco,    | 275          |         |
| Shanghai,         | 4            |         |
| Talcahuano,       | 25           |         |
| Tampico,          | 60           |         |
| Venice,           | 10           |         |







|                                      |        |      |       |
|--------------------------------------|--------|------|-------|
| <b>Aluminate—</b><br>neiro, 30 brls. |        |      |       |
| 2 cs.                                |        |      |       |
| 12                                   |        |      |       |
| 30 t. 10 c.                          | £356   |      |       |
| 250 t. 7 c.                          | £813   |      |       |
| N.B., 10                             | 36     |      |       |
| <b>Acid—</b>                         |        |      |       |
| 7 c.                                 | £5     |      |       |
| 9                                    | 5      |      |       |
| 2                                    | 3 q.   | 8    |       |
| <b>Phosphates—</b>                   |        |      |       |
| own, 599 t. 19 c.                    | £1,403 |      |       |
| 170                                  | 1      | 2 q. | 388   |
| 49                                   | 4      | 1    | 111   |
| 98                                   | 8      |      | 2,156 |
| <b>Acid—</b>                         |        |      |       |
| 1 c.                                 | £8     |      |       |
| 50 dms.                              | £20    |      |       |
| 100                                  | 47     |      |       |
| 1 cs.                                |        |      |       |
| 8 cks.                               |        |      |       |
| og, 20 dms.                          | 14     |      |       |
| 1                                    |        |      |       |
| 4                                    |        |      |       |
| 1 ck.                                |        |      |       |
| 1                                    |        |      |       |
| 7 c.                                 | £14    |      |       |
| <b>Lead—</b>                         |        |      |       |
| 40 kgs.                              |        |      |       |
| N.B., 10 c.                          |        |      |       |
| <b>Oride—</b>                        |        |      |       |
| 1 t. 3 c. 1 q.                       | £10    |      |       |
| 8                                    | 6      |      | 110   |

**CHESTER.**

Week ending March 25th.

|                      |        |  |  |
|----------------------|--------|--|--|
| <b>Am Carbonate—</b> |        |  |  |
| 5 cks.               | 4 kgs. |  |  |
| <b>Colours—</b>      |        |  |  |
| 2 cks.               |        |  |  |
| <b>Oil—</b>          |        |  |  |
| 2 dms.               |        |  |  |
| <b>Salt—</b>         |        |  |  |
| 10 kgs.              |        |  |  |
| 24 brls.             |        |  |  |
| <b>Chloride—</b>     |        |  |  |
| 4 dms.               |        |  |  |
| 98 brls.             |        |  |  |
| 24 cks.              |        |  |  |
| £1,275               |        |  |  |
| 2 cks.               |        |  |  |
| 8 cks.               |        |  |  |
| 30 dms.              |        |  |  |
| 75 cks.              |        |  |  |

**HULL.**

Week ending March 21st

|                                |         |   |  |
|--------------------------------|---------|---|--|
| <b>Am Sulphate—</b>            |         |   |  |
| 438 bgs.                       |         |   |  |
| 304                            |         |   |  |
| 106                            |         |   |  |
| 24 cks.                        | 12 dms. |   |  |
| 22                             |         |   |  |
| <b>g Powder—</b>               |         |   |  |
| 89 cks.                        |         |   |  |
| <b>(otherwise undescribed)</b> |         |   |  |
| 17 cks.                        | 24 pks. |   |  |
| 50                             |         |   |  |
| 10                             | 4 cs.   |   |  |
| gen, 2                         | 82      |   |  |
| 45                             |         |   |  |
| arg, 40                        | 32      | 6 |  |
| 1                              |         |   |  |
| 12                             |         |   |  |

|                                          |        |          |    |
|------------------------------------------|--------|----------|----|
| Harlingen, 5                             |        |          |    |
| Konigsberg, 2                            |        |          |    |
| Rotterdam, 16                            | 56     | 1        |    |
| Rouen, 30                                |        |          |    |
| Stettin, 10                              |        |          |    |
| <b>Cottonseed Oil—</b>                   |        |          |    |
| Amsterdam, 870 c.                        |        |          |    |
| Antwerp, 2,031                           |        |          |    |
| Drontheim, 40                            |        |          |    |
| Gothenburg, 100                          |        |          |    |
| Hamburg, 2,045                           |        |          |    |
| Rotterdam, 788                           |        |          |    |
| Stettin, 904                             |        |          |    |
| <b>Dyestuffs (otherwise undescribed)</b> |        |          |    |
| Dunkirk, 2 cks.                          |        |          |    |
| Hamburg, 3                               |        |          |    |
| Libau, 4 pks.                            |        |          |    |
| Rotterdam, 4                             | 5 cs.  | 1 kg.    |    |
| <b>Farina—</b>                           |        |          |    |
| Libau, 25 sks.                           |        |          |    |
| <b>Linseed Oil—</b>                      |        |          |    |
| Antwerp, 11 c.                           |        |          |    |
| Aalesund, 30                             |        |          |    |
| Christiania, 642                         |        |          |    |
| Copenhagen, 17                           |        |          |    |
| Drontheim, 228                           |        |          |    |
| Hamburg, 205                             |        |          |    |
| Stavanger, 85                            |        |          |    |
| <b>Manure—</b>                           |        |          |    |
| Dunkirk, 60 t.                           |        |          |    |
| <b>Mineral White—</b>                    |        |          |    |
| Harlingen, 200 bgs.                      |        |          |    |
| <b>Ochre—</b>                            |        |          |    |
| Amsterdam, 3 cks.                        |        |          |    |
| Hamburg, 26                              |        |          |    |
| <b>Paint—</b>                            |        |          |    |
| Gothenburg, 2 cs.                        |        |          |    |
| <b>Painters' Colours—</b>                |        |          |    |
| Amsterdam, 3 cks.                        |        |          |    |
| Antwerp, 16                              | 10 cs. | 103 pks. |    |
| Bergen, 26 dms.                          |        |          |    |
| Bremen, 21                               |        |          |    |
| Christiania, 4                           |        |          | 60 |
| 69 dms.                                  |        |          |    |
| Copenhagen, 33                           | 3      |          |    |
| 10 dms.                                  |        |          |    |
| Danzig, 19                               |        |          |    |
| Drontheim, 1                             |        |          |    |
| Dunkirk, 10                              |        |          |    |
| Ghent, 1                                 |        |          | 6  |
| Hango, 2                                 |        |          |    |
| Hamburg, 123                             | 2      | 10       |    |
| Harlingen, 1                             |        |          |    |
| Rotterdam, 9                             | 50     |          |    |
| Rouen, 85                                |        |          |    |
| Stettin, 41                              |        |          |    |
| <b>Pitch—</b>                            |        |          |    |
| Antwerp, 1 ck.                           | £90    |          |    |
| Hamburg, 1                               |        |          |    |
| <b>Tar—</b>                              |        |          |    |
| Amsterdam, 6 cks.                        |        |          |    |
| Antwerp, 3                               |        |          |    |
| Copenhagen, 6                            |        |          |    |
| Danzig, 5                                |        |          |    |
| Gothenburg, 5                            |        |          |    |
| Rotterdam, 2                             |        |          |    |
| <b>Varnish—</b>                          |        |          |    |
| Amsterdam, 1 ck.                         |        |          |    |
| Antwerp, 3 cs.                           |        |          |    |
| Christiania, 1 dm.                       |        |          |    |
| Ghent, 2                                 |        |          |    |
| Gothenburg, 1                            | 14     |          |    |
| Stettin, 9                               |        |          |    |
| <b>Whiting—</b>                          |        |          |    |
| Rotterdam, 2 cks.                        |        |          |    |

**GLASGOW.**

Week ending March 26th.

|                                          |     |  |  |
|------------------------------------------|-----|--|--|
| <b>Alumina—</b>                          |     |  |  |
| Rouen, 122                               |     |  |  |
| <b>Ammonium Sulphate—</b>                |     |  |  |
| Barbadoes, 102 t. 19½ c.                 |     |  |  |
| Iava, 146                                |     |  |  |
| Demerara, 58                             | 19½ |  |  |
| Antwerp, 102                             |     |  |  |
| <b>Carbolic Acid—</b>                    |     |  |  |
| Germany, 5 t. 14 c.                      |     |  |  |
| <b>Chemicals (otherwise undescribed)</b> |     |  |  |
| Madras, 178                              |     |  |  |
| <b>Coal Products—</b>                    |     |  |  |
| <b>Creosote Oil</b>                      |     |  |  |
| Hamburg, 78 t. 13 c.                     |     |  |  |
| <b>Napthha</b>                           |     |  |  |
| Dieppe, 7 t. 5 c.                        |     |  |  |
| Rouen, 445                               |     |  |  |
| <b>Napthalline</b>                       |     |  |  |
| Hamburg, 175 t.                          |     |  |  |

|                                         |        |  |  |
|-----------------------------------------|--------|--|--|
| <b>Pitch</b>                            |        |  |  |
| Calcutta, £20                           |        |  |  |
| Madras, 46                              |        |  |  |
| Bombay, 130                             |        |  |  |
| Santander, 1,071                        |        |  |  |
| Antwerp, 1,014 t.                       |        |  |  |
| Dieppe, 450                             |        |  |  |
| <b>Tar</b>                              |        |  |  |
| Calcutta, £47                           |        |  |  |
| Colombo, 58                             |        |  |  |
| Madras, 95                              |        |  |  |
| Hamburg, 5 t. 10 c.                     |        |  |  |
| Bombay, 156                             |        |  |  |
| Danzig, 775 brls.                       |        |  |  |
| <b>Coal Products (otherwise undes.)</b> |        |  |  |
| Rotterdam, £630                         |        |  |  |
| <b>Copperas —</b>                       |        |  |  |
| Bombay, £78                             |        |  |  |
| <b>Dried Blood—</b>                     |        |  |  |
| Bordeaux, 16 t. 5½ c.                   |        |  |  |
| <b>Dyestuffs (otherwise undes.)</b>     |        |  |  |
| Calcutta, £53                           |        |  |  |
| <b>Extracts—</b>                        |        |  |  |
| Christiania, £29                        |        |  |  |
| <b>Gelatine—</b>                        |        |  |  |
| Canada, £73                             |        |  |  |
| <b>Linseed Oil—</b>                     |        |  |  |
| Jamaica, 9 t. 11 c.                     |        |  |  |
| Canada, 13                              | 3      |  |  |
| <b>Litharge—</b>                        |        |  |  |
| Antwerp, £35                            |        |  |  |
| <b>Manure—</b>                          |        |  |  |
| Nantes, 8 t. 10 c.                      |        |  |  |
| <b>Painters' Colours—</b>               |        |  |  |
| Cape Town, £38                          |        |  |  |
| Colombo, 78                             |        |  |  |
| Durban, 25                              |        |  |  |
| Penang, 50                              |        |  |  |
| Bombay, 286                             |        |  |  |
| Demerara, 31                            |        |  |  |
| Singapore, 154                          |        |  |  |
| Yokohama, 150                           |        |  |  |
| <b>Paraffin Wax—</b>                    |        |  |  |
| Cape Town, £34                          |        |  |  |
| Rouen, 24                               |        |  |  |
| Christiania, 80                         |        |  |  |
| Hio, 65                                 |        |  |  |
| Bordeaux, 215                           |        |  |  |
| <b>Potash Salts—</b>                    |        |  |  |
| Delagoa Bay, 20 t. 12½ c.               |        |  |  |
| <b>Potassium Bichromate—</b>            |        |  |  |
| Lyons, £34                              |        |  |  |
| Paris, 364                              |        |  |  |
| Rouen, 280                              |        |  |  |
| Rotterdam, 198                          |        |  |  |
| Hio, 110                                |        |  |  |
| Yokohama, 311                           |        |  |  |
| Bordeaux, 144                           |        |  |  |
| <b>Potassium Prussiate—</b>             |        |  |  |
| Yokohama, £39                           |        |  |  |
| <b>Soap—</b>                            |        |  |  |
| Transvaal, 2 t.                         |        |  |  |
| Jamaica, 1                              | 17½ c. |  |  |
| Nagasaki, 2                             |        |  |  |
| Trinidad, 5                             | 6      |  |  |
| Bombay, 3                               | ¼      |  |  |
| <b>Sodium Bichromate—</b>               |        |  |  |
| Lyons, 1 t. 11½ c.                      |        |  |  |
| Paris, 12½                              |        |  |  |
| Rouen, 18                               | 8½     |  |  |
| Rotterdam, 1                            | 9½     |  |  |
| Bordeaux, 1                             |        |  |  |
| <b>Tallow—</b>                          |        |  |  |
| Rotterdam, 13 t. 6 c.                   |        |  |  |
| <b>Treacle—</b>                         |        |  |  |
| Christiania, 29 t. 10 c.                |        |  |  |
| <b>Ultramarine—</b>                     |        |  |  |
| Calcutta, £42                           |        |  |  |

**TYNE.**

Week ending March 21st.

|                           |       |  |  |
|---------------------------|-------|--|--|
| <b>Alkali—</b>            |       |  |  |
| Amsterdam, 25 t. 14 c.    |       |  |  |
| Rotterdam, 10             | 6     |  |  |
| Hamburg, 15               |       |  |  |
| <b>Alum—</b>              |       |  |  |
| Rotterdam, 10 t.          |       |  |  |
| <b>Ammonium Sulphate—</b> |       |  |  |
| Odense, 5 t.              |       |  |  |
| <b>Antimony—</b>          |       |  |  |
| Copenhagen, 2 t.          |       |  |  |
| New York, 45              |       |  |  |
| Hamburg, 2                | 10 c. |  |  |
| <b>Barium Carbonate —</b> |       |  |  |
| New York, 100 t.          |       |  |  |
| <b>Barium Chloride—</b>   |       |  |  |
| Dunkirk, 10 t.            |       |  |  |

|                                          |      |  |  |
|------------------------------------------|------|--|--|
| <b>Bleaching Powder—</b>                 |      |  |  |
| Libau, 10 t. 1 c.                        |      |  |  |
| Amsterdam, 35                            | 1    |  |  |
| Lisbon, 10                               | 2    |  |  |
| Odense, 10                               | 2    |  |  |
| Bergen, 5                                | 7    |  |  |
| Drontheim, 9                             | 19   |  |  |
| Rotterdam, 19                            | 1    |  |  |
| Hamburg, 22                              | 10   |  |  |
| Antwerp, 40                              | 3    |  |  |
| Christiania, 30                          | 4    |  |  |
| <b>Caustic Soda—</b>                     |      |  |  |
| Copenhagen, 1 t. 9 c.                    |      |  |  |
| Rotterdam, 5                             | 10   |  |  |
| Seville, 55                              | 15   |  |  |
| Hamburg, 24                              | 19   |  |  |
| Arendal, 4                               | 7    |  |  |
| Genoa, 14                                | 10   |  |  |
| <b>Chemicals (otherwise undescribed)</b> |      |  |  |
| Sebastopol, 5 c.                         |      |  |  |
| <b>Fluor Spar—</b>                       |      |  |  |
| Hamburg, 35 t.                           |      |  |  |
| <b>Litharge—</b>                         |      |  |  |
| Copenhagen, 1 t. 11 c.                   |      |  |  |
| Hamburg, 16                              |      |  |  |
| Amsterdam, 10                            |      |  |  |
| Christiania, 2                           | 4    |  |  |
| <b>Magnesia—</b>                         |      |  |  |
| Hamburg, 2 t. 19 c.                      |      |  |  |
| New York, 1                              | 2    |  |  |
| <b>Magnesium Sulphate—</b>               |      |  |  |
| Christiania, 5 t.                        |      |  |  |
| <b>Manure—</b>                           |      |  |  |
| Cherbourg, 191 t. 10 c.                  |      |  |  |
| Helsingborg, 1,500                       | 3    |  |  |
| Rostock Town, 600                        | 6    |  |  |
| <b>Oxalic Acid—</b>                      |      |  |  |
| New York, 3 t. 18 c.                     |      |  |  |
| <b>Paint—</b>                            |      |  |  |
| Hamburg, 1 t. 10 c.                      |      |  |  |
| Antwerp, 7                               |      |  |  |
| <b>Painters' Colours—</b>                |      |  |  |
| Hamburg, 15 c.                           |      |  |  |
| <b>Soda—</b>                             |      |  |  |
| Amsterdam, 30 t. 1 c.                    |      |  |  |
| Gibraltar, 17                            | 4    |  |  |
| Rotterdam, 10                            | 4    |  |  |
| Seville, 3                               |      |  |  |
| Smyrna, 8                                | 2    |  |  |
| Stamboul, 24                             | 16   |  |  |
| Christiania, 12                          | 14   |  |  |
| <b>Soda Ash—</b>                         |      |  |  |
| New York, 15 t. 18 c.                    |      |  |  |
| <b>Sodium Hyposulphite —</b>             |      |  |  |
| Antwerp, 5 t.                            |      |  |  |
| New York, 10                             | 2 c. |  |  |
| <b>Sodium Silicate—</b>                  |      |  |  |
| Lisbon, 32 t. 8 c.                       |      |  |  |
| Seville, 5                               | 5    |  |  |
| <b>Sulphur—</b>                          |      |  |  |
| Christiania, 78 t. 12 c.                 |      |  |  |
| <b>White Lead—</b>                       |      |  |  |
| Copenhagen, 2 t. 11 c.                   |      |  |  |
| Lisbon, 3                                | 5    |  |  |
| Christiania, 1                           | 4    |  |  |
| <b>Zinc White—</b>                       |      |  |  |
| Sebastopol, 2 t.                         |      |  |  |

**GOOLE.**

Week ending March 18th.

|                                         |       |  |  |
|-----------------------------------------|-------|--|--|
| <b>Coal Products (otherwise undes.)</b> |       |  |  |
| Antwerp, 58 cks.                        |       |  |  |
| Ghent, 4                                |       |  |  |
| Hamburg, 3                              | 1 pk. |  |  |
| Rotterdam, 142                          |       |  |  |
| <b>Colours—</b>                         |       |  |  |
| Boulogne, 6 cks. 10 cs.                 |       |  |  |
| <b>Manure—</b>                          |       |  |  |
| Dunkirk, 400 bgs.                       |       |  |  |
| Boulogne, 41                            |       |  |  |
| Ghent, 183                              |       |  |  |
| <b>Pitch—</b>                           |       |  |  |
| Antwerp, 100 t.                         |       |  |  |
| Dunkirk, 266                            |       |  |  |

**GRIMSBY.**

Week ending March 21st.

|                                         |  |  |  |
|-----------------------------------------|--|--|--|
| <b>Coal Products (otherwise undes.)</b> |  |  |  |
| Dieppe, 177 cks. 3 cs.                  |  |  |  |
| Rotterdam, 59                           |  |  |  |
| <b>Colours—</b>                         |  |  |  |
| Antwerp, 1 cs.                          |  |  |  |
| Dieppe, 15 cks.                         |  |  |  |
| Hamburg, 1                              |  |  |  |
| Rotterdam, 1                            |  |  |  |
| <b>Pitch—</b>                           |  |  |  |
| Antwerp, 65 t.                          |  |  |  |



## PRICES CURRENT.

WEDNESDAY, APRIL 1ST, 18

PREPARED BY MESSRS. HIGGINBOTTOM AND CO., 116, PORTLAND STREET, MANCHESTER.

The values stated are F.O.R. at maker's works, or at usual ports of shipment in U.K. The price in different localities may vary.

## Acids:—

|                                         |              |              |
|-----------------------------------------|--------------|--------------|
| Acetic, 25 % and 40 % .. .. .           | per cwt.     | 6/ & 9/-     |
| " Glacial .. .. .                       | "            | 10/-         |
| Arsenic S.G., 2000 .. .. .              | "            | 1 2 0        |
| Fluoric .. .. .                         | per lb.      | 0 0 3 1/4    |
| Muriatic (Tower Salts), 30° Tw. .. .. . | per bottle   | 0 0 10       |
| " (Cylinder), 30° Tw. .. .. .           | "            | 0 3 0        |
| Nitric 80° Tw. .. .. .                  | per lb.      | 0 0 1 1/4    |
| Nitrous .. .. .                         | "            | 0 0 1 1/4    |
| Oxalic .. .. .                          | nett         | 0 0 3 1/2    |
| Phosphoric, 1750° .. .. .               | "            | 0 1 0        |
| Picric .. .. .                          | "            | 0 0 11       |
| Sulphuric (fuming 50 %) .. .. .         | per ton      | 15 10 0      |
| " (monohydrate) .. .. .                 | "            | 5 10 0       |
| " (Pyrites, 168°) .. .. .               | "            | 3 0 0        |
| " " 150° .. .. .                        | "            | 1 5 0        |
| " (free from arsenic, 145°) .. .. .     | "            | 1 7 6        |
| Sulphurous (solution) S.G. 1025 .. .. . | "            | 3 0 0        |
| Tannic (pure) .. .. .                   | per lb.      | 0 1 2        |
| Tartaric .. .. .                        | "            | 0 1 2 1/2    |
| Arsenic, white powdered .. .. .         | nett per ton | 24 10 0      |
| Alum (loose lump) .. .. .               | "            | 4 12 6       |
| Alumina Sulphate (pure) .. .. .         | "            | 4 12 6       |
| Aluminoferrous .. .. .                  | "            | 2 7 6        |
| Aluminium .. .. .                       | per lb.      | 0 2 10       |
| Ammonia, Anhydrous .. .. .              | "            | 0 1 3        |
| " " 880=28° B. .. .. .                  | per lb.      | 0 0 2 1/4    |
| " " =24° B. .. .. .                     | "            | 0 0 1 1/4    |
| " Carbonate .. .. .                     | nett         | 0 0 3 1/4    |
| " Muriate .. .. .                       | per ton      | 22 10 0      |
| " (sal-ammoniac) 1st & 2nd .. .. .      | per cwt.     | 39/- & 37/-  |
| " Nitrate .. .. .                       | per ton      | 37 10 0      |
| " Phosphate .. .. .                     | per lb.      | 0 0 6 1/4    |
| " Sulphate (grey) London .. .. .        | per ton      | 8 2 6        |
| " (grey) Hull .. .. .                   | "            | 8 0 0        |
| Aniline Oil (pure) .. .. .              | per lb.      | 0 0 7 1/4    |
| Aniline Salt .. .. .                    | "            | 0 0 6 1/4    |
| Antimony .. .. .                        | per ton      | 30 0 0       |
| " (tartar emetic) .. .. .               | per lb.      | 0 0 8 1/2    |
| " (golden sulphide) .. .. .             | "            | 0 0 10       |
| Barium Chloride .. .. .                 | per ton      | 7 0 0        |
| " Carbonate (native) .. .. .            | "            | 3 10 0       |
| " Sulphate (native levigated) .. .. .   | "            | 42/6 to 65/- |
| Bleaching Powder, 35 % .. .. .          | nett         | 7 0 0        |
| " Liquor, 7 % .. .. .                   | "            | 3 10 0       |
| Bisulphide of Carbon .. .. .            | "            | 12 10 0      |
| Chromium Acetate (crystal) .. .. .      | per lb.      | 0 0 6        |
| Calcium Chloride .. .. .                | per ton      | 2 2 6        |
| China Clay (at Runcorn) in bulk .. .. . | "            | 15/- to 30/- |

## Coal Tar Products and Dyes:—

|                                            |                   |            |
|--------------------------------------------|-------------------|------------|
| Alizarine (artificial) 20 % .. .. .        | nett per lb.      | 0 0 7 1/4  |
| Magenta .. .. .                            | "                 | 0 3 9      |
| Anthracene, 30 % A, f.o.b. London .. .. .  | per unit per cwt. | 0 0 11 1/2 |
| Benzol, 90 % .. .. .                       | per gallon        | 0 2 3      |
| " 50/90 .. .. .                            | "                 | 0 1 8 1/2  |
| Carbolic Acid (crystallised 40°) .. .. .   | per lb.           | 0 0 8 1/2  |
| " (crude 60°) .. .. .                      | per gallon        | 0 2 3      |
| Creosote (ordinary) .. .. .                | "                 | 0 0 1 1/4  |
| " (filtered for Lucigen light) .. .. .     | "                 | 0 0 1 1/4  |
| Crude Naphtha 30 % @ 120° C. .. .. .       | "                 | 0 0 9      |
| Grease Oils, 22° Tw. .. .. .               | per ton           | 2 10 0     |
| Pitch, f.o.b. Liverpool or Garston .. .. . | "                 | 1 13 0     |
| Solvent Naphtha, 90 % at 160° .. .. .      | per gallon        | 0 1 3 1/2  |
| " Lucigen" and "Wells" Oils .. .. .        | "                 | 0 0 2 1/2  |
| Copper .. .. .                             | per ton           | 44 17 6    |
| " Sulphate .. .. .                         | "                 | 18 10 0    |
| " Oxide (copper scales) .. .. .            | "                 | 41 10 0    |
| Glycerine (crude) .. .. .                  | "                 | 36 0 0     |
| " (distilled S.G. 1250°) .. .. .           | "                 | 75 0 0     |
| Iodine .. .. .                             | nett, per oz.     | 0 0 9      |
| Iron Sulphate (copperas) .. .. .           | per ton           | 1 5 0      |
| " Sulphide (antimony slag) .. .. .         | "                 | 2 0 0      |
| Lead (sheet) for cash .. .. .              | "                 | 12 5 0     |
| " Litharge Flake (ex ship) .. .. .         | "                 | 14 10 0    |
| " Acetate (white " ) .. .. .               | "                 | 21 10 0    |
| " " brown " ) .. .. .                      | "                 | 16 0 0     |
| " Carbonate (white lead) pure .. .. .      | "                 | 16 0 0     |
| " Nitrate .. .. .                          | "                 | 19 0 0     |

|                                         |            |       |
|-----------------------------------------|------------|-------|
| Lime, Acetate (brown) (ex ship) .. .. . | per ton    | 4 7   |
| " " (grey) (ex ship) .. .. .            | "          | 7 10  |
| Magnesium (ribbon and wire) .. .. .     | per oz.    | 0 2   |
| " Chloride (ex ship) .. .. .            | per ton    | 2 7   |
| " Carbonate .. .. .                     | per cwt.   | 1 17  |
| " Hydrate .. .. .                       | per ton    | 17 0  |
| " Sulphate (Epsom Salts) .. .. .        | per ton    | 2 15  |
| Manganese, Sulphate .. .. .             | "          | 16 10 |
| " Borate .. .. .                        | per cwt.   | 2 15  |
| " Ore, 70 % .. .. .                     | per ton    | 3 15  |
| Methylated Spirit, 61° O.P. .. .. .     | per gallon | 0 1   |
| Naphtha (Wood), Solvent .. .. .         | "          | 0 3   |
| " " Miscible, 60° O.P. .. .. .          | "          | 0 3   |

## Oils:—

|                                                            |               |       |
|------------------------------------------------------------|---------------|-------|
| Cotton-seed .. .. .                                        | per ton       | 17 10 |
| Linseed .. .. .                                            | "             | 20 5  |
| Petroleum, American .. .. .                                | per gallon    | 0 0   |
| Stearine .. .. .                                           | per ton       | 24 0  |
| Phosphorus (yellow) .. .. .                                | per lb.       | 0 2   |
| " (red) .. .. .                                            | "             | 0 2   |
| Potassium (metal) .. .. .                                  | per oz.       | 0 3   |
| " Bichromate .. .. .                                       | nett per lb.  | 0 0   |
| " Carbonate, 90% (ex ship) .. .. .                         | per ton       | 17 5  |
| " Chlorate .. .. .                                         | per lb.       | 0 0   |
| " Cyanide, 98% .. .. .                                     | "             | 0 1   |
| " Hydrate (Caustic Potash) 90 % .. .. .                    | per ton       | 24 10 |
| " " (Caustic Potash) 75/80 % .. .. .                       | "             | 20 10 |
| " " (Caustic Potash) 70/75 % .. .. .                       | "             | 19 10 |
| " Nitrate (refined) .. .. .                                | per cwt.      | 1 1   |
| " Permanganate .. .. .                                     | per cwt.      | 3 7   |
| " Prussiate Yellow .. .. .                                 | per lb.       | 0 0   |
| " Sulphate, 90 % (ex ship) .. .. .                         | per ton       | 9 15  |
| " Muriate, 80 % (do.) .. .. .                              | "             | 8 10  |
| Silver (metal) .. .. .                                     | per oz.       | 0 2   |
| " Nitrate .. .. .                                          | "             | 0 2   |
| Sodium (metal) .. .. .                                     | per lb.       | 0 2   |
| " Carb. (refined Soda-ash) 48 % .. .. .                    | nett per ton  | 4 15  |
| " " (Caustic Soda-ash) 48 % .. .. .                        | "             | 4 5   |
| " " (Carb. Soda-ash) 48 % .. .. .                          | "             | 4 0   |
| " " (Alkali) 58 % .. .. .                                  | "             | 3 15  |
| " " (Soda Crystals) .. .. .                                | "             | 2 2   |
| " Acetate (ex-ship) .. .. .                                | "             | 14 10 |
| " Arseniate, 45 % .. .. .                                  | "             | 15 0  |
| " Chlorate .. .. .                                         | per lb.       | 0 0   |
| " Borate (Borax) .. .. .                                   | nett, per ton | 19 10 |
| " Bichromate .. .. .                                       | per lb.       | 0 0   |
| " Hydrate (77 % Caustic Soda) (f.o.b.) net pr. ton .. .. . | "             | 9 7   |
| " " (74 % Caustic Soda) .. .. .                            | "             | 8 7   |
| " " (70 % Caustic Soda) .. .. .                            | "             | 7 7   |
| " " (60 % Caustic Soda) .. .. .                            | "             | 6 7   |
| " " (60 % Caustic Soda, cream) (f.o.b.) .. .. .            | "             | 6 7   |
| " Bicarbonate .. .. .                                      | "             | 6 10  |
| " Hyposulphite .. .. .                                     | "             | 6 10  |
| " Manganate, 30% .. .. .                                   | "             | 16 0  |
| " Nitrate (95 %) ex-ship Liverpool .. .. .                 | per cwt.      | 0 8   |
| " Nitrite, 98 % .. .. .                                    | per ton       | 30 0  |
| " Phosphate .. .. .                                        | "             | 13 5  |
| " Silicate (glass) .. .. .                                 | per ton       | 4 10  |
| " " (liquid, 100° Tw.) .. .. .                             | "             | 3 10  |
| " Stannate, 40 % .. .. .                                   | per cwt.      | 3 2   |
| " Sulphate (Salt-cake) .. .. .                             | per ton       | 1 3   |
| " " (Glauber's Salts) .. .. .                              | "             | 1 10  |
| " Sulphide .. .. .                                         | "             | 7 15  |
| " Sulphite .. .. .                                         | "             | 5 5   |
| Strontium Hydrate, 100% .. .. .                            | "             | 8 10  |
| Sulphocyanide Ammonium, 95 % .. .. .                       | per lb.       | 0 0   |
| " Barium, 95 % .. .. .                                     | "             | 0 0   |
| " Potassium .. .. .                                        | "             | 0 0   |
| Sulphur (Flowers) .. .. .                                  | per ton       | 6 15  |
| " (Roll Brimstone) .. .. .                                 | "             | 5 0   |
| " Brimstone: Best Quality .. .. .                          | "             | 3 12  |
| Superphosphate of Lime (26%) .. .. .                       | "             | 2 7   |
| Tallow .. .. .                                             | "             | 22 0  |
| Tin Crystals .. .. .                                       | per lb.       | 0 0   |
| " English Ingots .. .. .                                   | per ton       | 64 10 |
| Zinc (Spelter) .. .. .                                     | "             | 15 10 |
| " Chloride (solution, 100° Tw.) .. .. .                    | "             | 5 2   |



# THE CHEMICAL TRADE JOURNAL

AND  
OIL, PAINT and COLOUR REVIEW.

Publishing Offices: 32, BLACKFRIARS STREET, MANCHESTER.

No. 464.

SATURDAY, APRIL 11, 1896.

Vol. XVIII.

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## LATE ADVERTISEMENTS.

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CORPORATION OF MOSSLEY.

GAS DEPARTMENT.

**TENDERS** are invited for the **TAR** produced for Sale at their Works during the 12 months ending the 25th March, 1897; also for **SPENT OXIDE** and the supply of **NEW OXIDE** required. Particulars and forms of Tender from the Manager, Mr. R. MERRELL. Sealed Tenders to be sent to me not later than the 25th instant. The Committee do not bind themselves to accept the highest or any Tender.  
JOSEPH HYDE, Town Clerk.

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## INSANITARY ATMOSPHERES.

A GREAT deal is heard about the unhealthiness of smoke and the evils that attend the emission of smoke from factories, and although undoubtedly the products of combustion are harmful in many ways, we are greatly inclined to think that much of the attention the smoke question has received has been arrested by the unsightliness of black smoke, rather than by its intrinsic danger to health; so that if the exits from factory chimneys were not so strikingly dense and black, much less, we think, would have been heard of the evils these iniquitous clouds of soot are said to spread over town and country.

The fact that the harmless portion receives more attention than the colourless but poisonous gases that accompany it does not, however, minimise the importance of the latter. There can be no doubt that in towns where the air is, so to speak, worked very hard, the pouring forth of large quantities of carbon and sulphur dioxides into the atmosphere is not at all desirous or beneficial. The high elevation at which they are discharged tends largely to lessen their deleterious influence but the atmospheric conditions are not always such as to allow the discharged products of combustion to be freely dissipated.

This being so, it would seem that the atmospheric condition of private and public rooms is of still greater importance, as, although the works' gases may descend and help vitiate the air we breathe, it is certain that the contamination of the confined air of buildings will be a more positive source of danger.

Since there is no visible indication that the air is being polluted, the point is one that is very liable to be overlooked in schools and large buildings where it is generally supposed by the occupants, in a vague sort of way, that all the necessary arrangements for the adequate supply of fresh air were made by the architect when designing the building.

It therefore becomes an open question whether many of the pale faces that are attributed to the pollution of the air by smoke are not really traceable to working in rooms and buildings that with the purest of air supplies would very soon become surcharged with carbon dioxide, producing lassitude, headache, and all the other attendant symptoms.

In schools in particular there is we think a danger of the air being thus rendered unfit for respiration, and the subject is one that might well receive the attention of the numerous Sanitary Associations that are at present aiming at the protection of public health. Apparently the case is less flagrant than that of smoke, but there are both facts and figures to show that the question of internal atmospheric pollution is quite as important if not more so than of external.

During the approaching summer we would suggest that the percentage of carbon dioxide in all the board schools and other public schools in some manufacturing centre such



as Manchester should be determined both in the fore and afternoon. If a sufficient number of tests were made to give reliable figures the results would show whether the atmospheres were unduly vitiated or not, under the most favourable conditions for maintaining the air in a salubrious state. For instance, it stands to reason that if it is shown that the air in these school rooms cannot be kept healthy in summer, when none of the oxygen is consumed by the gas-jets, the air will be infinitely worse in winter; and therefore under no conditions can work be done by children without injury to health.

There will not be anything very unprecedented in making such an investigation, but it will not be any the less valuable for that. The subject has received the attention of the advocates of hygienic ventilation in the past, and has recently received further attention owing to the experiments that were made a short time back upon the atmosphere of the Salvation Army night shelters.

In such places it is scarcely to be expected that the atmosphere would be otherwise than bad. The work of other experimenters upon the air of schools shows, however, a state of things as bad, and even worse, than in these shelters. It is not pleasant to think that children are daily endeavouring to exercise and expand their mental powers in an atmosphere of this nature, and yet there is every reason to fear that such is the case. There can be no harm in making the experiments, and if the results are favourable, so much the better. If they are not, we shall have found a clue to the deterioration of physique that seems to accompany the spread of elementary education.

### PATENT LAW REFORM.

THE Patent Law Reform Association, which was founded about four years ago, and has its headquarters in Liverpool, aims at the abolition of the many abuses for which the Patent Office is responsible, and is now endeavouring to press upon the Government the necessity of bringing about a modification of the existing law in three particulars, namely, the cessation of "voiding," the granting of valid titles to patents, and an extension of the average life-time of patents (which at present is five years) to seventeen or twenty-one years. Since 1852, when the French system of charging renewal fees and "voiding" for non-payment of these was introduced in this country, five millions and a half sterling in forfeited fees have been lost by inventors on the 131,167 patents that have voided. It is not surprising that the Americans beat us in mechanical and other inventions, when the British mode of renewal fees causes over ninety per cent. of registered patents to come to grief before there has been time to make them pay, and when £99 is the ordinary charge here for a common fourteen years' patent, as compared with £7. in America for a similar privilege for seventeen years. Besides, in this country, the Patent Office issues no certificate of validity with any new invention, while in the United States, where there is no system of renewal fees, and consequently no voiding, for less than £2. a patent is inspected and certified for validity by the official examining experts, of whom there are more than two hundred. It has been said that in the invention and adoption of new machinery the Americans are a generation ahead of the people in this country; and some confirmation of this view is afforded by the fact that during the last forty years our Yankee cousins could boast of 190,111 full-time patents completely worked out, as against 6,792 such inventions which we free-born Britons have had the privilege of possessing and enjoying. A cynic has described the aim of the British Patent Laws as being "to protect the public against new inventions;" and when we consider the barriers, in the form of heavy scales of fees, of tedious waiting, and of pedantic legal procedure which the would-be inventor in this country has to surmount before he is even within sight of success, the definition given above does not appear altogether inapt. One thing is very certain, and that is that the British system makes it almost impossible for a poor man to derive any profit from an invention which he may discover, or to receive any adequate reward for what may have been the result of years of toil and trouble.

## The Patent List.

*This list is compiled from Official sources in the Manchester Technical Laboratory, under the immediate supervision of George E. Davis and Alfred R. Davis, who report professionally upon the value of Chemical Patents.*

### APPLICATIONS FOR ENGLISH LETTERS PATENT.

Manufacture of Celluloid. M. E. Asselot, *née* Martin. 6,389. March 23.  
Manufacture of Manure. N. F. B. de Mercey. 6,403. March 23.  
Apparatus for Manufacture of Oxygen. A. Sweetser. 6,408. March 23.  
Extracting Sugar with Barium Hydroxysulphide and Regenerating the Latter. W. Feld. 6,508. March 24.  
Decomposing Sodium or Potassium Chloride and Generating Electricity. L. Epstein and F. Marza. 6,520. March 24.  
Improvements in Soap. E. Benz. 6,558. March 25.  
Production of Iron, etc., from its Ores by a new Pyrochemical Process. A. Karyscheff and S. Demmenie. 6,654. March 26.  
Producing Basic Lead Carbonate and Obtaining Bye-products. The Chemical and Electrolytic Syndicate, Ltd., A. J. Steinhardt, and J. L. F. Vogel. 6,655. March 26.  
Obtaining Ammonia, Chlorine, and Hydrochloric Acid from a Mixture of Ammonium Chloride Vapour, Hydrochloric Acid, and Ammonia. F. Bole. 6,808. March 28.  
Manufacture of Carbonic Acid Gas. B. T. L. Thomson. 6,835. March 28.  
Washing and Bleaching Composition. C. M. Levy. 6,836. March 28.  
Improvements in Coke Ovens. G. Hilgenstock. 6,857. March 28.

### ABSTRACTS OF LATEST COMPLETE SPECIFICATIONS.

*These abstracts are specially prepared for the Chemical Trade Journal and ALL RIGHTS of publication are RESERVED. This is the earliest series of abstracts of Chemical and allied patents accessible to the public.*

Improvements in Apparatus and Appliances for Washing Coal and other Minerals; also applicable for Washing or Separating Chemicals, Vegetable and other Solid or Liquid Matter. P. Muschamp, Warren Grove, Barnsley, and S. Burridge, 25, Change Alley, Sheffield. Eng. Pat. 8,526. April 30th, 1895.

An inclined semi-circular trough is fitted with a spiral conveyor, the radius of the lower portion of the trough corresponding to the radius of the conveyor, so that the former can rock on its axis concentrically with the axis of the conveyor. A stream of water is kept flowing down the trough. The coal or substance to be washed is introduced at the lower end of the trough, and is carried upward by the conveyor against the descending stream of water. Troughs and conveyors, or rocking cradles have been previously employed, and no claim to novelty is preferred in this connection. The essential feature of the invention is the use of a rocking tube or channel fitted with a spiral conveyor, so arranged as to work against, instead of with, the stream of water flowing through the channel.

Improvements in and Apparatus for the Decomposition of Alkaline Nitrates. H. K. Baynes and The Chemical and Electrolytic Syndicate, Limited, both of 6, Clement's-lane, Lombard-street, E.C. Eng. Pat. 7,473. April 9th, 1895.

The alkaline nitrate is mixed intimately with ferric oxide, and then decomposed by heat with the evolution of nitrous fumes, which are at once removed. The decomposition is effected in an inclined, horizontal, revolving retort partially enclosed in a furnace in which it is heated to a cherry red. The inside of the retort is ribbed longitudinally so that as it revolves it picks up and projects the mixture continuously. To ensure the removal of small particles that would cling to the sides and flux, the exterior of the retort is constantly jarred by the blows of a spring hammer, operated by cams or wipers on the body of the retort. The ferric oxide used must be as pure as possible, and about two parts are used to every one of nitrate. The mixture is fed into the upper end of the retort by a hopper and screw-feed, the shaft of the screw being hollow, and thus providing an outlet for the nitrous fumes which are swept out by a current of air or steam introduced at the lower end of the retort. The ultimate product is an alkaline ferrite, which falls through a chamber at the end of the retort into a receptacle, thereby sealing the lower end of the retort and preventing the escape of the nitrous fumes. The alkaline ferrite obtained is decomposed on heating with water into a solution of caustic soda and ferric oxide. An ingenious spring expansion and contraction joint is described for closing and connecting the top of the retort with the feeding hopper. There are four drawings.



**ents in the Manufacture of Cyanides.** H. W. Crowther, The West Bromwich; E. C. Rossiter, Smethwick, and G. S. Albright, Edgbaston, Birmingham. Eng. Pat. 2,659. May 1, 1895.

Cyanides are converted into cyanides by heating with zinc or combine with the sulphur. An arrangement of four pots is used, mechanical agitators and two without. The pots are supported one by a flange, and are provided with lugs for lifting in and in the case of sulpho-cyanide of potassium, sufficient is placed in a drying pot to fill it two-thirds full when melted. The continued while lime kiln gases are passed through. When nature reaches 450° to 500° F. the pot is transferred to the furnace and the agitator introduced. When all is made tight or zinc is introduced and the heating is continued under until the contents are red hot. When on testing, the reaction to be complete, the shaft is disconnected and the pot with the withdrawn from the furnace and allowed to cool. The consequently lixiviated with water, the insoluble sulphide by filtration, and the solution evaporated *in vacuo* until the cyanide salts out.

dealing with sulpho-cyanide of sodium, the pot with the ted, and containing a charge of sulpho-cyanide, is put direct decomposing furnace and the sulpho-cyanide melted in its own crystallisation. When the bulk of the water has been he inert gases are introduced to prevent oxidation and the rried out in the same way as with the potassium salt.

**ents in the Preparation of Chloride of Lead for use in Elec- Storage Batteries, and for other Purposes.** A. R. Davis, 32, Mars-street, Manchester. Eng. Pat. 2,914. May 4, 1895.

Lead is treated with hot dilute hydrochloric acid, the whole ated and kept as near the boiling point as possible. When n contains as much lead chloride as is possible, it is run off es of coolers, where the bulk of the chloride deposits. The er liquor, which overflows into a well, is thrown by an to a heating-tank, situated above the level of the decompos-

More acid is added, as may be required, and the solvent, o about 212°F, is used to dissolve a fresh quantity of lead o cope with increase in the volume of the liquid in , a portion of the cooled solvent is treated with carbonate of ecipitate the lead it contains. The precipitate is substituted valent of oxide in the decomposer, and the liquid is run essels of any suitable material can be used, but preference is amelled iron for the heating and decomposing vessels, which e provided with steam jackets. Instead of hydrochloric acid of this acid with either acetic acid, nitric acid, or both, may There are two drawings.

**ved Method of and Apparatus for Treating Brine in the acture of Salt.** J. Todd, Andreas, Isle of Man. Eng. Pat. 2,342. 1895.

of allowing the gases from the salt pan furnaces to escape the chimney at a temperature of 500° to 700°F., they are the tubes of a vertical tubular boiler, and so to the chimney space round the tubes is filled with brine, which is heated sing to the pans. The top of the boiler is of a conical shape, ystals of salt cannot form on the surface. Owing to this onstruction the brine can be heated above the temperature to form crystals, so that on passing into the pan they at once e boiler is prolonged below the level of the pans so that e settle out and can be removed, leaving the purified brine to e pans. There are plan and sectional elevation drawings.

**ved Odourless Liquid Manure.** G. A. Mackintire, Corona, n, Bath. Eng. Pat. 14,143. July 25, 1895.

ce of sodium nitrate, 3 pecks of goat droppings, 4 gallons of e (or rain water), two or three large lumps of charcoal, and a sure of soot are mixed and allowed to stand two or more he mixture can then be bottled and sealed. One quart to of water make the desired liquid manure.

**OF THE RAND GOLD INDUSTRY.**—The Rand output last upwards of 2,250,000 oz., representing in value nearly o. sterling, and showing an increase over the output of 1894 250,000 oz. The value of the machinery, buildings, and e Rand companies is now computed at about £10,000,000. whilst the aggregate dividends declared by the Rand com- th mining and finance, for 1895 amounted to £3,994,044, as 1,981,854. for 1894. The total output of native gold from during the past nine years has been more than 9,000,000 oz., e of nearly £36,000,000. sterling.

## SOCIETY OF CHEMICAL INDUSTRY.

### LIVERPOOL SECTION.

**T**HIS section met on Wednesday evening, April 1st, at University College. Dr. C. A. Kohn and Mr. C. Louquet Higgins exhibited a number of Röntgen shadowgraphs, which they had taken. These included excellent examples of feet and hands, in which the details of the bones were remarkably clear; the cases of a sprained wrist and a dislocated thumb were especially interesting. They demonstrated also Mr. Edison's recently-discovered method of rendering the "X" rays visible by means of calcium tungstate, this agent giving considerably better results than the barium-platino-cyanide, used by Professor Röntgen. By placing objects between the tube and the screen (for instance coins in a leather purse, weights in a wooden box) the shadows were clearly shown. The bones in the hand and wrist were also distinctly visible on the screen.

Mr. Douglas Herman introduced to the members of the section his improved form of respirator for use by workmen, when engaged amongst noxious gases; the respirator is made to fit closely round the mouth and nose by an air cushion, and fresh air is supplied under pressure, through a long flexible tube, excess air and exhaled air escaping through a simple valve, attached to the top of the "muzzle." In the course of his remarks in connection with the use of respirators, Mr. Herman drew especial attention to the beneficial effect of oxygen supplied under pressure to men who have been "gassed" and insisted that a cylinder of oxygen ought to be kept, and complete instructions as to its use posted up in all works, where there is at any time any possibility of accident from noxious gases.

Mr. James Beveridge contributed a paper, at once interesting and exhaustive, on the manufacture of wood cellulose in Scandinavia. This paper was succeeded by the description of a method for calculating the amount of steam required to dry a ton of paper or pulp, likewise given by Mr. Beveridge, and with which the business of the evening terminated.

### SCOTTISH SECTION.

A meeting of this section took place in Glasgow on Tuesday, April 7th, when there fell to be overtaken the discussion on the paper read by Mr. D. R. Steuart at the March meeting on the standard of flash-point for mineral oil. It was insisted that lamp accidents were never heard of in Scotland where the native oil was almost exclusively used, and the conclusion arrived at was that burning oil of 73° flash-point having proved itself dangerous, the flash-point ought to be raised to 100° Fahrenheit as a plain measure of public safety. The report of the Secretary of the section for the session 1895-96 was read, from which it appeared that the membership roll stands at 293, as compared with 290 at April, 1895. This was favourable so far, but the attendance at meetings had fallen away badly, the reckoning for the year being an average of 17, with a minimum of four. Mr. James Hendrick read a paper on "Experiments with Bordeaux Mixture." He emphasised the close connection between agriculture and chemistry, and particularly the valuable aid the latter had extended to the former in the provision of remedies for the insect and fungoid pests which at times so baffled the efforts of the farmer. Bordeaux mixture was first used about 14 years ago in France to cure, or at least mitigate, the mildew and other like diseases incidental to the vine. Subsequently it was applied largely in other countries, particularly the United States, over a wide field of plant disease, and gradually it had attained to the distinction of being recognised as the most generally useful fungicide in the market. It early made its mark in fighting the diseases to which the potato is subject. The mixture was prepared by adding lime to a solution of copper sulphate until complete precipitation took place. There have, however, been many tentative modifications from time to time, and to these are no doubt due the unsatisfactory results which have sometimes accrued. The use of the mixture has been largest and most successful in Ireland, so far as the British area is concerned. It has been tried in Scotland, but not with the same marked result, probably because stronger and better varieties of potatoes being used there, a like field for distinction is not presented. Experiments had been carried on systematically in the neighbourhood of Glasgow in connection with the Glasgow and West of Scotland Technical College agricultural department, but the results were not satisfactory; and in view of the good work done elsewhere, the failure was somewhat in the nature of a puzzle—one which would require further experiments to clear up. In addition to the business above sketched, the Chairman, Dr. John Clark, made some remarks on the estimation of antimony in ores, etc.

**FERTILIZER FOR MELONS AND CUCUMBERS.**—The following mixture is recommended by M. T. Poggi for the cultivation of melons and cucumbers:—Bone superphosphate, 50 grams; potassium chloride, 20 grams; nitrate of soda, 30 grams. This quantity is to be used for each plant.



## THE LIFE WORK OF LIEBIG.

BY A. HOWARD.

(Continued from page 227.)

*Agriculture.*—Speaking generally, the first twenty years of Liebig's life, after his return from Paris, were devoted to pure chemistry. The next period was distinguished by his remarkable contributions to chemistry as applied to agriculture and physiology. Perhaps some idea of the range and depth of his work over the whole field of pure and applied chemistry may be gained from the fact that, on his death in 1873, it was felt to be impossible that any one man could sufficiently comprehend all the subjects he had advanced, and his share in their advancement, and that, therefore, not one, but three of his colleagues were charged with the duty of delivering commemorative addresses, each one of them undertaking that part of the great master's work with which he was himself most familiar from his own lifework. Vogel delivered the address on agricultural chemistry, Erlinmeyer took his chemical work, and Bischoff physiological chemistry.

Liebig's first writings on agricultural chemistry, and on fermentation, were presented in 1840 to the British Association. "Perfect agriculture," he says, "is the true foundation of all trade and industry; it is the foundation of the riches of states. But a rational system of agriculture cannot be formed without the application of scientific principles. For such a system must be based on an exact acquaintance with the means of nutrition of vegetables, and with the influence of soils and actions of manure upon them. This knowledge we must seek from chemistry, which teaches the mode of investigating the composition, and of studying the character of the different substances from which plants derive their nourishment."

*The Humus Theory.*—Owing to the fact that virgin soils are often particularly well suited for the cultivation of plants, and that these virgin soils have been found to be very rich in vegetable mould, or humus, it had come to be supposed, prior to the date of Liebig's earliest writings on agricultural chemistry, by many chemists and agriculturists, that this vegetable mould was the source of the fertility of these soils. By an extension of this idea many vegetable physiologists ascribed the fertility of all soils to its presence, and even regarded it as the chief nutriment of the plants. It was supposed by them that the humus was extracted from the soil by the roots of the growing plants. In Germany this view was very widely accepted. Liebig showed that humus is almost insoluble in water, and therefore could not be absorbed by plants to any great extent. He showed that the air is the source of the carbon of plants. Humus is woody fibre in a state of decay. In contact with air it undergoes gradual oxidation. Humus, then, represents mainly certain stages in the primitive processes which connect one generation of vegetables with those which succeed it.

The following sentences by Liebig constitute the essence of his doctrine; they already contain the complete programme of the agricultural chemistry which has been created since that time:—"The nutritive materials of all green plants are inorganic substances. . . . Plants live upon carbonic acid, ammonia, water, phosphoric acid, sulphuric acid, silicic acid, lime, magnesia, potash, and iron. Dung, the excrementa of the lower animals and of man, does not act upon plant life through the direct assimilation of its organic elements, but indirectly through the products of its decomposition and putrefaction processes, *i.e.*, by the transformation of its carbon into carbonic acid, and of its nitrogen into ammonia or nitric acid. Organic manure, which consists of portions or *débris* of plants and animals, may be replaced by the inorganic compounds into which it breaks up in the ground." From these axioms Liebig drew the all-important conclusion that the soil must be replenished with whatsoever constituents have been withdrawn from it by the culture of plants, if its exhaustion is to be provided against.

Liebig and his pupils came to the conclusion that free nitrogen as such was not directly assimilated by plants. This view, however, has been overthrown by the researches of Hellriegel and those of Lawes and Gilbert and Warrington in this country.

Liebig's researches on plant nutrition all went to prove that the same substances as are found in the ashes of plants are the true nutrients of the latter, and are absolutely indispensable to them. But they did more than this in showing the significance, not merely of the nutritive materials contained in the soil, but also of the form in which these are present (whether soluble or insoluble), and of their action upon the other constituents.

The earliest series of experiments on the absorption by different soils of the mineral constituents which serve as food for plants was due to Liebig. These observations were of great importance for the explanation of the action of manures.

Notwithstanding, however, that an immense number of new facts have been brought to light through these and other labours, the fundamental principles of Liebig's doctrine have undergone no alteration since he first gave them to the world in his pioneering work of 1840. He clearly recognised in all its broad features how plants draw their nutriment from the constituents of the air and the soil. Upon this he

based his doctrines of rational husbandry, which have already borne the richest fruits, and in the elaboration of which scientific and men are still engaged.

To conclude this brief and incomplete account of Liebig's agriculture, I should like to quote a few lines from Sir Henry's obituary notice in *Nature* for May 8th, 1873:—

"Other and wider questions, to the solution of which Liebig life turned his energies, were those respecting the establishment of scientific agriculture, and the foundation of a new science of logical chemistry. It is in this direction that his labours known to the general public in England, and there is no although in many details his views have since proved erroneous he was correct in the main issues, and that the stimulus British agriculture through Liebig's teaching and investigation been of the most important kind. Agriculturists have been aware that a scientific basis for their practice exists, which, yet complete, can still explain much in their art of what had previously depended on mere empiricism. Then, again, the interest and which were thus brought to bear on these subjects has led to the establishment of agricultural colleges, and to the carrying out of results like those magnificent ones of Lawes and Gilbert, from which receiving information concerning the various questions relating to life such as long continued investigation and observation at the field."

(To be continued.)

## LIABILITY FOR LOSS OF GOODS.

INSTRUCTIVE TEST CASE.

A CASE of considerable importance to merchants and others signing goods by the Ship Canal was decided last week by Honour Judge Parry at the Manchester County Court. The plaintiffs, Messrs. F. Becker and Company, Cannon-street, London, claimed compensation from the Canal Company for the loss of six bales of wood pulp. The defendants, on whose behalf Mr. Langdon appeared, claimed that the bales formed part of a cargo of 3,600 bales imported for Chadwick and Taylor, Ordsall Mills, Salford, per the steamship *Chile*. When the case was heard at a previous sitting of the court, Mr. Newman, for the defendants, said the position of the Canal Company seemed to be misunderstood by those who had business relations with them. The work of transferring the goods over the side of the ship into the waggons was work done for the ship, and did not concern the plaintiffs. The company then acted as hauliers to take the bales to the works of Messrs. Chadwick and Taylor. They only received 10s. per ton for this work. It was not part of their duty to count the goods either in or out of the waggons, or to see to the custody of the goods; they did was to supply the motive power in transferring the goods from point to point. They were not carriers, and the provisions of the Act of haulage distinctly provided only for the use of the canal trucks, and did not cover the checking of the goods. The small sum which they made was presumptive evidence that they were not carriers, but merely as hauliers.

Mr. Langdon now argued the case at some length. He contended that what was termed the order for haulage was really a carriage order, and that as such it was void as being unreasonable within the provisions of the Railway and Canal Traffic Act, 1854. There could be no doubt that this was a bailment of some description, and in support of his contention as to the liability of the company he cited the cases against the North Staffordshire Railway Company, and against the Lancashire and Yorkshire Railway Company. The difference between the conveyance by a railway company and the Canal Company seemed to him to be that the former accepted responsibility which the latter expressly refused. The contention was unreasonable, because the Canal Company absolutely exempted itself from any risk whatever, and because they provided no motive. The siding from the wharves to the plaintiffs' works was undoubtedly the quickest and best form of transit for the goods, and the Canal Company possessed the sole monopoly. The Act of 1854 especially provided that every railway, canal company, or other company, should according to their powers afford facilities for the receiving, forwarding, and delivering of traffic from the several railways and canals belonging to or worked by them. The main point was whether or not the Ship Canal Company was controlled by the Railway and Canal Companies Act.

Mr. Newman said the first question was whether the Canal Company was a railway company within the meaning of the Railway and Canal Traffic Act. He contended they were not. It was true they constructed railways, but it did not follow that because two lines placed equidistant from one another along a piece of ground constituted a railway within the meaning of the Act. The company had no powers to employ traction power for the purposes of haulage; they possessed no certificate from the Board of Trade to use the railways for the purposes of railways.



His Honour: Then under what statutory powers do you make the extract at all?

Mr. Newman replied that the contract for haulage was made simply cause the company owned the lines. Surely there was no objection. His Honour said the company seemed to be doing something which was altogether outside the scope of their powers.

Mr. Newman contended that it was a private line, and as such the canal company had a perfect right to take it up altogether if they so chose. They had always been willing to take the risk of these goods, at a much higher rate than sixpence per ton.

His Honour, in the course of a lengthy judgment, ruled that the contract which provided that the company should take no responsibility whatever was unreasonable. It was also clear that the goods in question passed over a considerable portion of railway upon the company's ways, and it was an extraordinary thing for a company in the position of the Ship Canal Company to come to the court and say that they could not point to anything in their statutes authorizing them to make these haulage charges. He had no doubt that the Canal Company were a railway company bound by the provisions of the Act. That being so, the plaintiffs were entitled to recoup themselves for the loss sustained, and there must be judgment for the amount claimed (£4), with costs. Leave to appeal was granted.

### THE HEATING OF AUSTRALIAN COAL.

AN interesting report upon the conditions of the spontaneous heating of coal has been communicated by the Government Geologist of New South Wales (Mr. E. F. Pitman) to the Minister for Mines in connection with the heating of a coal cargo on board the *Knight of St. Michael*. The report states:—At about 9.30 a.m. on the 25th February found a temperature of 84° Fahr. in the centre of the coal immediately beneath No. 2 hatch, while in the hold near the side of the vessel the temperature was only 77°. It was noticeable that the coal contained large proportion of smalls and dust. At about 9.45 a.m., on the 27th February, I found that the temperature had risen to 88° Fahr. in the centre of the coal under No. 2 hatch, while in the hold near the side of the vessel it was 76°. At the same hour the temperature of the coal in No. 3 hatch was 79°, and in No. 4 hold it was 73°, while the shade temperature on deck was 69°. It is clear from the foregoing remarks that the temperature of portions of the cargo is at the present time abnormally high, and there is reason for believing that, if left alone, it would continue to increase until spontaneous combustion ensued. Samples of the coal taken by me have been analysed by Mr. J. C. Lingay in the Departmental Laboratory, with the following results:—

#### FROM NO. 2 HATCH.

|                            | 1      | 2      |
|----------------------------|--------|--------|
| Hygroscopic moisture ..... | 2.65   | 2.81   |
| Volatile hydrocarbon ..... | 35.80  | 35.32  |
| Fixed carbon ..            | 55.30  | 54.47  |
| Ash .....                  | 6.25   | 7.40   |
|                            | 100.00 | 100.00 |
| Sulphur .....              | 0.535  | 0.453  |

#### FROM NO. 4 HATCH.

|                            |        |
|----------------------------|--------|
| Hygroscopic moisture ..... | 2.45   |
| Volatile hydrocarbon ..... | 37.65  |
| Fixed carbon .....         | 52.30  |
| Ash .....                  | 7.70   |
|                            | 100.00 |
| Sulphur .....              | 0.508  |

It may be stated, therefore, that the cargo consists of semi-bituminous coal of good quality, but containing a large proportion of dust and smalls. The coal was, I am informed, screened at the pit mouth, and in the present condition is, I presume, due to subsequent handling.

From the investigation of eminent European authorities, such as Richter, Fayal, Lewes, and others, there can be little doubt—first, that the principal cause of spontaneous combustion in coal is the absorption of oxygen by the coal; and second, that the most favourable conditions for the self-heating of coal are a mixture of pieces and dust, an elevated temperature, a large mass or volume of coal to act as a non-conducting covering, and a certain volume of air. These conditions are precisely those which exist in the *Knight of St. Michael's* cargo. The cargo was, I understand, loaded during the abnormally hot weather which prevailed at the end of January, and it is probable, therefore, that it reached the hold with an initial temperature of from 100 to 150 deg. Fahr. In loading from the trucks at Newcastle a considerable proportion of smalls and dust has been produced by the fall of the coal by the process of trimming; by the filling up of the hold the large volume of coal necessary to form a non-conducting covering has been provided, while just about sufficient air has access to the hold to com-

plete the necessary conditions. I am of opinion, therefore, that the heating of the cargo of the ship, *Knight of St. Michael*, is due, firstly, to the fact that the coal contains a large proportion of 'smalls' and 'dust,' and secondly, to its having been loaded during abnormally hot weather. The proportion of 'smalls' and 'dust' has no doubt been increased by the shifting operations which have taken place since the arrival of the ship in Port Jackson, and I am of opinion that considerable risk would be incurred if the *Knight of St. Michael* were allowed to put to sea with her cargo in its present state."

### EXPORTS OF ALKALI AND BLEACH.

THE following returns, which are taken from the official foreign and colonial statistics of the United Kingdom, give the amount and value of alkali and bleaching materials shipped to the undermentioned countries for month ending February 29th, 1896, as compared with 1895:—

#### ALKALI.

| Port.                    | 1895.   | 1896.   | 1895.  | 1896.  |
|--------------------------|---------|---------|--------|--------|
|                          | Cwts.   | Cwts.   | £      | £      |
| Russia .....             | 5,511   | 2,745   | 1,729  | 706    |
| Sweden and Norway ....   | 5,174   | 4,215   | 975    | 1,073  |
| Germany .....            | 3,891   | 3,885   | 1,050  | 1,015  |
| Holland .....            | 5,386   | 8,825   | 1,240  | 1,885  |
| France .....             | 2,496   | 4,755   | 901    | 1,742  |
| Spain and Canaries ..... | 21,362  | 35,026  | 6,891  | 12,446 |
| Italy .....              | 17,045  | 21,354  | 5,460  | 6,951  |
| United States .....      | 247,040 | 159,822 | 54,893 | 35,101 |
| Australasia .....        | 9,320   | 18,026  | 2,859  | 5,488  |
| British North America .. | 6,894   | 5,970   | 1,739  | 1,402  |
| Other countries .....    | 70,641  | 76,208  | 21,903 | 22,857 |
| Total .....              | 394,760 | 340,031 | 99,640 | 90,666 |

#### BLEACHING POWDER, ETC.

| Port.                 | 1895.  | 1896.  | 1895.  | 1896.  |
|-----------------------|--------|--------|--------|--------|
|                       | Cwts.  | Cwts.  | £      | £      |
| United States .....   | 77,362 | 64,444 | 26,454 | 22,871 |
| Other countries ..... | 21,084 | 28,111 | 7,865  | 10,252 |
| Total .....           | 98,446 | 92,755 | 34,319 | 33,123 |

### HINTS TO BRITISH TRADERS.

THE British Consul at Calais, Mr. Keene, addresses, in the course of a report, some advice to British firms as to the conduct of Continental business:—"Judging by the letters and circulars a consul receives during a year," he says, "he is evidently supposed by many British firms to be their lawful medium for promoting the sale of their goods. However able and willing a consul may be to supply such information as he properly can as to the trade requirements of his district, it is impossible for him to act as a general agent for British firms. British trade cannot hope to be pushed entirely by the instrumentality of the consul, or by demands addressed to him for a list of the principal importers and retailers of manufactures, ranging from needles to heavy machinery. Neither can it be expected that British foreign trade will be greatly extended until British chambers of commerce and British traders recognise the fact that the distribution among consuls of illustrated price lists and other advertisements which, though displayed in the consulates, rarely, if ever, lead to an order, is of infinitesimal value as compared with the persuasive manner of the well-trained traveller or agent of other countries, of Germany especially, who has made a study of the business habits and requirements of the several districts he visits. This is a subject I have touched on in one of my reports from another country, and one on which several consuls have strongly expressed their opinions, but, so far as I can see, without the desired result. It is undoubtedly the duty of a British consul to assist British subjects in their mercantile concerns as far as he can properly do so consistently with the discharge of his shipping and other duties, but however anxious he may be to promote and increase British trade, he can hardly hope to succeed if the British trader will not help himself."

HOLIDAY STOPPAGES IN THE ALKALI TRADE.—The United Alkali Co., Ltd., have closed their chemical works at St. Helens, Widnes, and other places, from Thursday, 2nd inst., until Monday, 13th inst., thus prolonging the holiday break from the usual two or three days to ten.



### THE MINERAL OIL INQUIRY.

AT the last sitting of the Select Committee of the House of Commons, appointed to inquire into the working of the Petroleum Acts, Mr. A. Spender, chief officer of the Public Control Department of the London County Council, gave it as his opinion that the existing Petroleum Acts were quite inadequate. They dealt wholly with Petroleum spirit, which was much less in use than petroleum oil, the result being that the great bulk of petroleum coming into the country was subject to no control whatever. The County Council had made representations to the Government on the subject. Petroleum spirit had practically ceased to be used for illuminating purposes, but, at the same time, the quantity used for trade and manufacturing purposes was constantly increasing. There were in London 360 premises licensed for the use of petroleum spirit for trade or manufacturing purposes. It was of the greatest importance that the spirit should be contained in properly sealed vessels, in order to minimize the danger arising from the escape of vapour. In the conveyance of the spirit the County Council were strongly of opinion that it should be in properly closed vessels. The Council had approved of underground premises for storage purposes, and one dangerous fire in the neighbourhood of the Thames, in which great quantities of resin were burning, had proved the safety of underground storage. The object of obtaining further powers in respect of petroleum oil was to enable the authorities to deal with reckless or want-of-thought people. There were people who would drop matches on petroleum-saturated floors, which might cause formidable fires. He quoted statistics showing the growth in the importation of petroleum oil during the last six years, and mentioned that while the import of American oil had gone on increasing that from Russia had decreased. In his opinion, the Bill of 1891 introduced by the Home Office would meet the whole requirements in regard to the storage and carriage of oil. The witness reserved his evidence with regard to dangerous lamps. The committee adjourned for the Easter recess.

### PRODUCTION AND COST OF RUSSIAN PETROLEUM.

AN extensive description of the oil field of Baku, Russia, with full and most interesting particulars regarding modes of drilling, characteristics of the oil, &c., is given in a recent issue of the *Pittsburg Times* by B. H. Butler, a staff correspondent who was sent to visit the field. In his account Mr. Butler says that the Baku wells are situated in four places. South of Baku about two miles is Bibi-Eibat, a field about a fourth of a mile square, which is now producing about as much oil as all the fields in America that are producing "Pennsylvania" oil. Eight miles south of Baku is Balakhani, the greatest field of Russia. This field appeared about two miles long by half as much in width. Close by and really an extension is Saboonchi, and further east the small region of Romances. The four fields do not cover a scope of more than four square miles. The Romancee field is famous from containing the big well of Aaddulacoff, which flowed at one time 150,000 barrels a day more than all the wells of America combined were doing at the same time.

Of the production and cost of Russian oil, this report says: In 1894 eight wells reached a monthly production of more than 120,000 barrels each, and these wells are responsible for more than one-fifth of the total yield for the year. Of the wells completed in 1894 only two were finished with eight-inch pipe at the bottom (for all the wells must be cased to the extreme end of the hole). The balance were finished with pipe ranging from 10 to 22 inches. It can be easily seen that a well with a small six-inch hole, as they are drilled in the United States, would not permit the free discharge of the sand a Russian well vomits, to say nothing of the oil that it is expected to send to the surface. But a 16-inch hole at the bottom of the well, enlarging to 28 at the surface is different.

The cost of producing oil at Baku is in some wells enormous as compared with the results. A small well is not a fortune. On the other hand, the reward from a big well is so great that the average cost and the average result compare quite favourably. Drilling a well is figured to cost, including everything, about £4. a foot. Contractors, working as in America, get about £1. a foot until 700 feet is reached, when the price is materially advanced.

To produce the oil when the hole is down costs 2½ cents a barrel for royalty, and, if the well has to be pumped, about 5 cents for pumping. The pump is an ordinary bailer, probably 40 feet long and a foot in diameter. In the smaller holes, of course, the diameter must be less. The average producer should have at least 15 cents a barrel for his crude, and the smaller wells need more to be profitable. Yet 15 cents from February, 1891, to November, 1894, was away above the market price. From September, 1891, to June, 1894, the price had rarely been as high as 10 cents, and averaged about 7 cents. Now, however, it is good, running in the neighbourhood of 30 cents.

The average daily production of the 46 wells completed in 444 barrels when finished. These same 46 wells in 1894, the for which figures are available, did an average of 66 barrels wells finished in 1890 had an initial production of 284 barrels well, which declined in 1894 to an average of 100 barrels to The average production of 87 wells drilled in 1894 gives the startling figure of 1,037 to the well as the daily average production. This is on a basis sustained for several months of the year—not what the wells started at.

The flowing well does not produce the bulk of the oil at the well, regardless of the phenomenal output of the giants. The figures will show the proportion produced by the gusher and pumper in the past eight years:

| Year.      | Flowing well. | Total Production |
|------------|---------------|------------------|
| 1888 ..... | 8,760,000     | 21,840,000       |
| 1889 ..... | 5,040,000     | 23,040,000       |
| 1890 ..... | 6,000,000     | 27,156,000       |
| 1891 ..... | 4,680,000     | 32,952,000       |
| 1892 ..... | 9,120,000     | 34,380,000       |
| 1893 ..... | 13,080,000    | 38,964,000       |
| 1894 ..... | 7,320,000     | 35,700,000       |
| 1895 ..... | 13,000,000    | 45,100,000       |

These figures represent barrels of 42 gallons each, the American measure.

In 1894, 220 wells were deepened, cleaned out or repaired in manner; that is to say, they had stopped producing, and not to bring them into play again. Of the wells finished in 1894, begun in 1890, eight were commenced in 1891, seven in 1892; in 1893, which shows that drilling in Russia is not the swiftest the world.

As may be imagined, it would be impractical, if not impossible, for the well owner to provide tankage for his big production when it is struck. So he wisely attempts nothing of the kind. In the fields there are not enough iron tanks to contain the total of half-a-dozen of the monsters. Therefore the "cistern" is not to play. It is a hole in the ground, and in America it would be a pool or reservoir. Some of them are nothing but the salt water once were part of the sea before it receded to its present dimensions. These lakes make model reservoirs for oil, for water-tight, and the water in them serves as a bottom to keep the oil from the dirt. Imagine a lake with a few feet of oil run on top of the water, and you have the true conception of the "tankage" of most of the Russian oil. Of these open lakes and pools there are 111, which will hold 12,000,000 barrels of oil. To produce in some measure several of the pools have been covered. Covered earth-pools have a capacity of 5,000,000 barrels. An experiment on the earth-pool is the stone reservoir, of which 49 cover 82 open cisterns will hold 3,000,000 barrels. The iron tank less than a thousand, and will store 3,286,000 barrels, from which it is seen that the iron tanks in Baku are of small consequence in the care of the production.

In supposing that Baku makes no good oil, the American is wrong. While it is quite different from our Pennsylvania crude, Russian oil is finding favour in a great many places. The heavy oil of about 0.87 specific gravity. The tendency is to oil as the wells go deeper. The oil has a dark colour, is of an odour, free from sulphur, with an asphalt base. It is not a light oil, like the Ohio crude, although in some respects it resembles it. The Russian oil is lacking in the life that characterizes Pennsylvania oil. On that account it does not deteriorate much when turned into great reservoirs in the ground.

The field is well equipped with refineries, of which about 100 are in the minority, but do the bulk of the refining. The refineries are chiefly situated at Baku, piping the oil from the adjacent fields. The refiners are experts, and employ able chemists, keeping in touch with any good methods that are at any place. They aim to get from the crude about 30 per cent illuminant, 20 per cent of lubricant, and of "astatki" or about 35 per cent, leaving some waste. This proportion realised, probably from 25 to 28 per cent. of illuminating oil is a real result. The refined oil, of course, varies according to the man who makes it. If he is eager to get the largest percentage of refined, he will press the distillation for quantity the result of a heavy oil, of a high fire test, which will not burn in the lamp. I saw a cargo loaded at Batoum on a tank steamship was certified by the official inspector as of a specific gravity of 0.84 with a flash test of 84 degrees by Abel's close test. The colour between a light amber and standard white. It was bound for America and China.

Of the lighter products, like benzene and gasoline, hardly a drop is discovered in Russian crude to speak of. Nor is paraffine, or by-products that help the American refiner. After the lamp



lubricating oil are taken off in the refinery, all the balance is astatki, except a proportion of waste, which is practically an asphalt residuum, and as such has been used to some extent in fixing the streets of Baku. Astatki is really one of the most valuable of all the products of distillation. Russia is short on coal and wood in the southern parts particularly. Wood in Baku is worth £2. to £2. 5s. a cord. So astatki is a fuel in general use, except in the city limits, where it is largely forbidden.

### THE TYNE CHEMICAL TRADE.

THE following list has been specially abstracted from the yearly analysis made by the Tyne Improvement Commissioners of goods imported and exported from the Tyne in 1895. As the figures include coastwise shipments, the coastwise total is given as well as the total for the year, the difference being the amount of foreign imports or exports, as the case may be. The annual total for 1894 is also given for the purpose of comparison:—

| Description of Goods.                | IMPORTS.                  |                 |                 |
|--------------------------------------|---------------------------|-----------------|-----------------|
|                                      | Total.<br>Coast-<br>wise. | Total.<br>1895. | Total.<br>1894. |
| Candles .. .. .                      | tons 1,057                | 1,061           | 1,088           |
| Cement .. .. .                       | 905                       | 912             | 839             |
| Barytes .. .. .                      | 256                       | 2,519           | 2,911           |
| Nitre and Salt Cakes .. .. .         | 5,610                     | 5,610           | 4,152           |
| Soap .. .. .                         | 2,547                     | 2,567           | 3,145           |
| Arsenic .. .. .                      | 486                       | 495             | 293             |
| Chemicals (o.u.) .. .. .             | 2,245                     | 3,156           | 1,983           |
| China Clay and Stone .. .. .         | 8,288                     | 8,309           | 7,774           |
| Glucose .. .. .                      | 86                        | 480             | 449             |
| Molasses .. .. .                     | 867                       | 867             | 964             |
| Drysalts' Stores .. .. .             | 4,562                     | 5,401           | 5,702           |
| Cotton and Linseed Cake .. .. .      | 638                       | 2,899           | 1,509           |
| Litharge and Colours .. .. .         | 750                       | 1,139           | 1,253           |
| Lead Ochre .. .. .                   | 414                       | 1,156           | 731             |
| Bones .. .. .                        | 644                       | 1,209           | 754             |
| Guano and Manure .. .. .             | 924                       | 1,098           | 1,411           |
| Nitrate of Soda .. .. .              | 319                       | 4,985           | 5,041           |
| Phosphates .. .. .                   | —                         | 16,216          | 15,894          |
| Antimony Ore .. .. .                 | 2,065                     | 2,186           | 2,878           |
| Burnt Sulphur Ore .. .. .            | 77,185                    | 78,587          | 79,063          |
| Manganese and Manganese Ore .. .. .  | 526                       | 529             | 915             |
| Sulphur Ore .. .. .                  | —                         | 56,209          | 69,577          |
| Plaster of Paris and Whiting .. .. . | 967                       | 1,009           | 891             |
| Salt .. .. .                         | 74,987                    | 80,259          | 98,537          |
| Slag .. .. .                         | 13,504                    | 13,904          | 15,235          |
| Oils (Mineral) .. .. .               | 3,798                     | 24,398          | 22,711          |
| Oils (other sorts) .. .. .           | 4,163                     | 4,500           | 5,678           |
| Tar and Pitch (Mineral) .. .. .      | 406                       | 425             | 864             |
| Paper .. .. .                        | 2,269                     | 3,481           | 3,345           |
| Tallow, Fat, and Grease .. .. .      | 984                       | 1,140           | 1,446           |
| Bark, Spent .. .. .                  | 7,016                     | 7,016           | 6,570           |
| Bark, Tanners' .. .. .               | 231                       | 1,233           | 1,735           |
| Cutch .. .. .                        | 3                         | 3               | 5               |
| Esparto Grass .. .. .                | —                         | 9,369           | 11,890          |
| Resin .. .. .                        | 81                        | 2,489           | 2,621           |
| Shumac .. .. .                       | 404                       | 404             | 212             |
| Tar and Pitch (Vegetable) .. .. .    | brls. 444                 | 6,133           | 5,474           |
| Valonia .. .. .                      | tons. 95                  | 95              | 95              |
| Wood Pulp .. .. .                    | 221                       | 3,365           | 2,172           |
| EXPORTS.                             |                           |                 |                 |
| tons                                 |                           |                 |                 |
| Blacking .. .. .                     | —                         | 1               | 11              |
| Alkali and Soda Ash .. .. .          | 1,106                     | 10,110          | 10,340          |
| Alum and Alum Cake .. .. .           | 3,348                     | 3,949           | 3,220           |
| Ammonia and Salammoniac .. .. .      | 115                       | 3,990           | 3,281           |
| Arsenic .. .. .                      | 19                        | 250             | 197             |
| Barytes Carb. and Sulph. .. .. .     | 669                       | 4,539           | 5,638           |
| Baryta Manufactures .. .. .          | 320                       | 1,034           | 851             |
| Bi-Carbonate of Soda .. .. .         | 23                        | 97              | 32              |
| Bleaching Powder .. .. .             | 14,562                    | 31,803          | 33,898          |
| Caustic Soda .. .. .                 | 7,693                     | 18,275          | 21,459          |
| Copperas .. .. .                     | 109                       | 200             | 359             |
| Epsom Salts .. .. .                  | 7                         | 44              | 8               |
| Hyposulphite of Soda .. .. .         | 741                       | 1,308           | 886             |
| Magnesia .. .. .                     | 133                       | 437             | 349             |
| Manganate of Soda .. .. .            | —                         | —               | —               |
| Manure (o.u.) .. .. .                | 6,038                     | 19,743          | 28,087          |
| Nitrate of Soda .. .. .              | 105                       | 115             | 83              |
| Potash .. .. .                       | 52                        | 53              | 345             |
| Pearl Hardening and Gypsum .. .. .   | 891                       | 931             | 976             |
| Soap .. .. .                         | 105                       | 130             | 195             |

|                                       |        |        |        |
|---------------------------------------|--------|--------|--------|
| Soda Crystals .. .. .                 | 34,379 | 42,147 | 57,229 |
| Sulphate of Soda .. .. .              | 269    | 12,954 | 6,760  |
| Sulphur .. .. .                       | 215    | 9,494  | 9,665  |
| Silicate of Soda .. .. .              | 125    | 400    | 403    |
| Chemicals (o.u.) .. .. .              | 250    | 621    | 551    |
| Cement .. .. .                        | 15,813 | 23,598 | 31,479 |
| Glue .. .. .                          | 12     | 12     | 31     |
| Litharge .. .. .                      | 238    | 971    | 870    |
| Red and White Leads and Paint .. .. . | 15,826 | 20,909 | 20,064 |
| Lampblack and Coal Dust .. .. .       | 192    | 237    | 188    |
| Lime .. .. .                          | 235    | 235    | 354    |
| Oil, Varnish, and Turpentine .. .. .  | 8,224  | 8,651  | 6,485  |
| Paper .. .. .                         | 5,294  | 5,576  | 5,223  |
| Plaster of Paris and Whiting .. .. .  | 121    | 129    | 205    |
| Purple Ore .. .. .                    | 57,574 | 57,682 | 73,616 |
| Salt .. .. .                          | 35     | 338    | 303    |
| Slag and Mill Cinders .. .. .         | 5,960  | 18,225 | 32,723 |
| Sugar and Molasses .. .. .            | 15     | 15     | 62     |
| Tar, Pitch, and Resin .. .. .         | 71     | 299    | 418    |
| Venetian Red .. .. .                  | 439    | 623    | 492    |
| Vinegar and Acids .. .. .             | —      | 96     | 168    |
| Wood Pulp .. .. .                     | 36     | 36     | —      |

It is interesting to know to or from what countries the chief shipments of some of the more important items go or come, and we therefore append the following special analysis:—

**Imports:—**Holland and Belgium supply the greater part of the barytes, and Germany about a seventh less than these two conjointly. The quantity of glucose from U.S.A. is about 100 tons higher than in 1894. The shipments of cotton and linseed cakes from Russia have increased more than fourfold, but Germany has fallen out completely. Of phosphates, 11,356 tons were from U.S.A., and 3,251 from Belgium, this being an increase in the former and a decrease in the latter case. Of bones, 516 tons came from South America. There is a slight increase in the U.S.A. shipments of mineral oils, and a marked increase in the total for Russia. Wood pulp was chiefly sent from Norway, the total being 2,329 tons, against 11,03 tons in 1894.

**Exports:—**Norway was the sole recipient of blacking. The largest shipment of alkali was sent to Sweden, followed in order of size by Belgium, Russia, and U.S.A. The total for the latter port was 1,075 tons, against 527 tons in 1894. Of bleach, Belgium takes the lead, instead of Russia, with a total of 5,016 tons, followed by Russia, Germany, and U.S.A. Russia took most caustic soda, with 1,948 tons, the next being U.S.A., with 1,855 tons, against 2,205 tons in 1894, after which Spain, Italy, and Germany come next in order. The Russian increase is very marked, as that country came fourth in order of shipments in 1894. U.S.A. takes the lead with hypo. Belgium and Denmark took most soda crystals. Silicate of soda was sent mainly to Spain and Russia. The only important shipment of salt was sent to South America. Belgium took 12,255 tons of slag and mill cinders.

### EXPORTS OF PETROLEUM FROM U.S.A.

THE Chief of the Bureau of Statistics, Washington, gives the following returns of the exports of petroleum and petroleum products for February, 1896. The total shipments were 57,967,088 gallons, compared with 60,645,714 gallons in 1895. The total for the eight months ending February, 1896, was 586,420,860 gallons, against 611,206,989 gallons during the same period in 1895. The details of the shipments are as follow:—

| CRUDE PETROLEUM.              |            | Gallons. |
|-------------------------------|------------|----------|
| Total, February, 1896 .. .. . | 7,413,237  |          |
| " " 1895 .. .. .              | 6,605,968  |          |
| NAPHTHAS.                     |            |          |
| Total, February, 1896 .. .. . | 403,632    |          |
| " " 1895 .. .. .              | 39,608     |          |
| ILLUMINATING.                 |            |          |
| Total, February, 1896 .. .. . | 46,162,249 |          |
| " " 1895 .. .. .              | 51,097,589 |          |
| LUBRICATING AND PARAFFIN.     |            |          |
| Total, February, 1896 .. .. . | 3,987,130  |          |
| " " 1895 .. .. .              | 2,901,793  |          |
| RESIDUUM.                     |            |          |
| Total, February, 1896 .. .. . | 840        |          |
| " " 1895 .. .. .              | 756        |          |

**Obituary.**—We regret to record the death of Mr. John Cannington, of the well-known firm of Cannington, Shaw, and Co., glass bottle, etc., manufacturers, St. Helens, which took place on Friday, 3rd inst. Mr. Cannington was 75 years of age.



## Trade Notes.

**MESSRS. F. PEARN AND CO., LIMITED.**—The Manchester City Council recently confirmed the acceptance by the Gas Committee of the tender of Messrs. Pearn and Co., Limited, for two hydraulic double "Goliath" pumps for water-gas plant.

**THE WANTAGE SEWAGE SCHEME.**—The scheme submitted by Mr. C. A. Atkinson, C.E., of the Liverpool firm of Goodison, Atkinson, and Forde, civil engineers, for the sewerage and sewage disposal for the town of Wantage, Berkshire, has been accepted by the council.

**THARSIS COMPANY'S DIVIDEND.**—The dividend of 17½ per cent. for 1895, announced by the directors of the Tharsis Sulphur and Copper Company, Limited, was a pleasant surprise, as the market only expected 12½ per cent. In 1894 the dividend was 10 per cent., in 1893 12½ per cent., in 1892 15 per cent., and in 1891 12½ per cent.

**FIRE AT A DISTILLERY.**—Early on Tuesday morning a fire broke out at Harbey's distillery, Port Dundas, Glasgow, originating from the explosion of spirit vapour. The stillhouse was at once enveloped in flames, and the stillman, Donald M'Lellan, aged 33, was severely burned in escaping. Damage estimated at £5,000. was done before the fire was extinguished.

**SOCIETY OF CHEMICAL INDUSTRY: London Section.**—The next meeting will be held at Burlington House on Monday, April 13th, at 8 p.m. After the election of officers for the session 1896-7, a paper will be read by Mr. R. W. Sindall on "The Estimation of Water in Wood Pulp;" and also one by Mr. Watson Smith on "A Study of Comparative Affinities in the Case of Certain Salts of Ammonia—Part II."

**PETROLEUM DISCOVERIES IN SPAIN.**—Large petroleum deposits have been discovered near Conil in the province of Cadiz. The territory was recently inspected by the chief engineer of the province, and English engineers were engaged to commence drilling. The owner of the property, Faustina Caro, has applied for the necessary government permit, which is to cover 4.59 acres.

**IMPROVEMENT IN AMERICAN FERTILISER TRADE.**—Owing to the improved financial condition of American cotton planters, and their resolution to devote increased attention to cotton this year, there has been a marked advance in fertiliser sales. The returns published by the Georgia Agricultural Department show that the sales of fertilisers during the present season to March 14th reached 310,000 tons, against 150,000 tons to the corresponding date in 1895, or the total of only 220,000 tons during the whole of last season.

**WATER IN BUTTER.**—Joseph Inman, grocer, Bednall-street, Queen's-road, and of Buckley-street, Oldham-road, Manchester, was summoned on Wednesday before the city justices, under the Food and Drugs Act, for selling to an inspector on the 13th ult. butter containing 21.8 per cent. of water. Mr. G. Rook, who prosecuted, said this was the first prosecution in Manchester since the hearing of an important case two years ago. There had, however, been many convictions for similar offences in different parts of the country. Mr. C. Estcourt, the city analyst, said that the sample of butter submitted to his inspection contained nearly 22 per cent. of water. It was not heavily salted, and 15 per cent. of water was an ample allowance in such cases. The defendant said the butter was in the same condition when sold as it was when he bought it. A fine of 20s. and costs was imposed.

**THE FAILSWORTH SEWAGE PURIFICATION WORKS.**—These works were recently formally opened. The works are situated at Clayton Bridge, near to the Newton Heath boundary of the township. Mr. James Wild (chairman of the Failsworth District Council) presided. The Chairman, prior to handing to Mr. Dunkerley (chairman of the Sewage Disposal Committee) a gold key with which to unlock the valve controlling the outfall works, said that the scheme for the treatment of sewage was now completed, and, in his opinion, it would turn out to be the best of its kind in the county. That was a great deal to say for a little place like Failsworth. (Hear, hear.) Mr. Dunkerley said he had much pleasure in declaring the works open. (Applause.) He rejoiced to think that they were superior to anything of the kind in this part of the country. Indeed, he was not sure whether Failsworth was not the pioneer township in the matter of adopting this particular kind of aerated process of filtration. Practical experiments had conclusively proved that the system which they were adopting was the very embodiment of sanitary science and experience brought down to modern times. (Hear, hear.) In the conception and carrying out of the details of these works, Mr. Lomax, their engineer, had shown an ability and experience, coupled with a judgment, such as was rarely found in so young a man. (Hear, hear.) At the conclusion of the speech-making, the company proceeded to inspect the precipitation tanks and filter beds, and witnessed them in operation.

**EXTRAORDINARY STATEMENTS ABOUT MARGARINE.**—A meeting of the Nantwich Farmers' Club was held on Saturday last, to discuss and take action with reference to Bills before Parliament affecting the interests of agriculturists. Speaking with respect to the Agricultural Produce Marks Bill and the Prevention of Fraud Bill, Mr. Sadler, the secretary, said the public were hoodwinked by fancy names which were given to rubbish put upon the market. Only last week two farmers, from whom he received the statement first hand, visited a bone works, and in being shown round the premises their attention was attracted by a heap of bones. A quantity of these bones were human bones, which had probably been collected from a recent battlefield. Near this heap of bones was a great tub of fat, which, they were informed, had been boiled out of the bones. When asked what was done with it, the reply was—"We sell it at £17. per ton, and it can be manufactured into margarine." It was their duty, as farmers, to enlighten the public in regard to these preparations, and, once enlightened, the public would prefer Cheshire butter at a reasonable price rather than margarine which was made from fat procured from human bones and from animals which were probably affected with all kinds of disease.—[Were these two gentlemen hoaxed? If not, ought the matter to end here?—ED., C.T.J.]

## NOTICES.

### LONDON AGENTS

Booksellers and Newsagents may now obtain supplies

"THE CHEMICAL TRADE JOURNAL"

From

MR. JOHN HEYWOOD,

2, Amen Corner,

On usual trade terms.

Paternoster Row, E.C.

### FOREIGN REMITTANCES.

Owing to the inconvenience created by the various ways in which foreign subscriptions are remitted, we respectfully beg to inform subscribers that a *Crossed MONEY ORDER* is the most satisfactory method of remitting, both for them and ourselves. In the case of a Money Order, a letter advising us of same should always be sent, otherwise, owing to post-office formalities, much delay in tracing and acknowledging foreign remittances is inevitably entailed in this country.

## Market Reports.

### TAR AND AMMONIA PRODUCTS.

Benzols are steady, with 90's at 2s. 2d. and 50/90's 1s. 8d. Carbolic acids are rather easier, 60% crude being a penny lower and 40% crystals down to 8d. Crude naphtha is unaltered at 9d., while solvent is a shade easier, the quotation now being 1s. 3d. Creosote and anthracene are both about the same, the former, if anything, inclining to weakness. Pitch is quiet at 33s. f.o.b. East Coast.

Business in sulphate of ammonia has been broken and uncertain during this week. The demand has been indifferent, and export orders scarce. Prices remain at the same dead level, Beckton being quoted £8., London outside makes, £8. 2s. 6d., Liverpool, £8., Hull £8., and Leith £7. 17s. 6d., all prompt. Nitrate firm, but rather quiet.

### MISCELLANEOUS CHEMICAL MARKET.

Business in the alkali trade is rather quieter on the whole. Prices, however, remain firm, as values are generally recognized to be at their lowest point, and any fluctuation in the market demand is met rather by curtailment in output than by reduction in price. Ammonia alkali steady at £3. 7s. 6d., bags, makers' works. Caustic soda, f.o.b. Liverpool, 77%, £9. 7s. 6d.; 74%, £8. 7s. 6d.; 70%, £7. 7s. 6d.; 60%, £6. 7s. 6d. per ton, 10-ton lots and upwards. Leblanc ash 1d. to 1½d. per degree, f.o.b., in casks. Soda crystals 32s. 6d. to 35s. per ton, bags, f.o.b. makers' works. Bleaching powder on the whole is quiet, and price is steady at £7. per ton, f.o.b., spot delivery, and £6. 15s. for contracts; £7. to £7. 5s. f.o.b. Liverpool, according to market. Chlorate of potash 4½d., and chlorate of soda 6¼d. per lb. Saltcake in rather better inquiry at 22s. to 23s., f.o.b. Sulphur £3. 12s. 6d. per ton. For vitriol and muriatic acid there is a fairly steady demand, and no change in price. In potash, caustic and carbonate, business is still brisk, and prices are firm. Sulphate of copper £18. 10s., f.o.b. Brown acetate of lime without quotable



Other acetates and acetic acid in moderate request, and steady. Yellow prussiate of potash quiet at  $7\frac{1}{4}$ d. to  $7\frac{1}{2}$ d. prussiate of soda  $6\frac{1}{4}$ d. to  $6\frac{1}{2}$ d. per lb. White powdered iron, and in limited supply at  $\pounds 23$ . to  $\pounds 24$ . for forward delivery. Nitrates very scarce, and higher prices ruling. Nitrate of soda cwt. Ammonia and salts generally are steady. Carbolic slightly easier: 8d. per lb. for 39/40%; liquid carbolic 1s. 2d. n. Reports from all districts indicate a rather quiet state of miscellaneous chemicals.

### REPORT ON MANURE MATERIAL.

Business during the week has been somewhat interrupted by the frost, but there continues to be a fair demand for prompt and early delivery.

Quotations for mineral phosphates are unchanged. The price of River Plate bones is as last reported, there being sellers for at  $\pounds 3$ . 17s. 6d. per ton. On spot, Bombay bone meal is at  $\pounds 4$ . per ton, ex store, and this price would have to be paid for Kurrachee bones. For March-April shipment  $\pounds 3$ . 17s. 6d. was asked for Bombay bone meal, and for later shipment some would no doubt be accepted. The demand for nitrate of soda is up, and spot price is 8s. to 8s.  $1\frac{1}{4}$ d. per cwt., according to quality.

Due cargoes are worth about 7s.  $10\frac{1}{2}$ d. per cwt., and autumn shipment 8s. 3d. to 8s. 6d. Home-prepared dried fishers at 7s. 6d. per unit, free on rails at works.

### LIVERPOOL MINERAL MARKET.

Up to the holidays the market has been rather quiet, but there is a prospect of good business for next week. The scarcity of iron ore still continues, arrivals being *nil*, prices are therefore high, particularly as the demand is now strong, and the stocks of buyers are being very much reduced. Ground manganese is in good demand, and prices are firm at  $\pounds 8$ .,  $\pounds 10$ .,  $\pounds 12$ ., 5s. per ton, according to quality. Manganiferous iron ore is at high prices. Chrome ore: Arrivals have been only very small and prices are unaltered. Bauxite is in good demand at 20s. for first, 18s. for second, and 12s. for third quality, f.o.b.; several shipments have been made this week. French chalk: The demand is still strong, especially for the higher grades of "Angel White" brands, prices are firm at 65s. to 70s., 80s. to 90s., and 100s. to 110s. per ton. "Angel White" brands. Wolfram and scheelite continue in demand. Ferro-tungsten and ferro-chromium are also in better demand. Arsenic continues scarce at very high prices. Fuller's earth at 50s. for lump, 55s. for powdered, and 75s. per ton for ble powdered, "Emerald," and other brands. Ochres and iron are in quiet demand at 60s. to 65s. per ton for J.C. ochre, and 45s. per ton for prime umber. Antifricion ore is without change. Stone: There is more inquiry for this, prime powdered being at  $\pounds 6$ . to  $\pounds 7$ . per ton, and prime Tenerife lump at  $\pounds 7$ . 10s. 6d. is in increasing demand at  $\pounds 4$ .,  $\pounds 6$ ., and  $\pounds 8$ . per ton. Silica and mica are in good demand, for high-class qualities early. Bog ore: Stocks are practically exhausted, and prices are firm. Magnesite continues to sell slowly at last figures. Graphite is very active for foundry and lubricating qualities at  $\pounds 6$ . per ton, and prime Ceylon at  $\pounds 15$ . to  $\pounds 20$ . per ton. Carbonate of barium: The production has somewhat improved, but demand still continues quiet. Molybdenite, cerite, euxenite, etc., meet with a quiet demand.

### THE METAL MARKETS.

LONDON, WEDNESDAY.—Pig iron, dull: Scotch warrants at 46s.  $9\frac{1}{2}$ d.; Middlesbrough, 38s.  $3\frac{1}{2}$ d. cash, and hematite, 40s. Copper, easy: Chili bars, G. O. B.'s and G. M. B.'s, at  $\pounds 45$ . 5s. to  $\pounds 45$ . 10s. cash, and  $\pounds 45$ . 15s. on 15th. Tin, steady: Straits closed at  $\pounds 60$ . 2s. 6d. to  $\pounds 60$ . 12s. 6d. and  $\pounds 60$ . 15s. to  $\pounds 61$ . 5s. three months; Australian,  $\pounds 60$ . 1s.; English ingots,  $\pounds 64$ . Lead, easy: Spanish,  $\pounds 11$ .; Silesian spelter, ordinary,  $\pounds 15$ . 10s. 11s. 3d. Nickel, 1s.  $2\frac{1}{2}$ d. Antimony,  $\pounds 30$ . 5s. Quicksilver, first hands,  $\pounds 6$ . 17s. 6d.; second hands,  $\pounds 6$ . 16s. 6d. Copper firm: Cape,  $2\frac{3}{4}$  to  $2\frac{1}{2}$ ; Copiapo, 2 to  $2\frac{1}{4}$ ; Libiola, 3 to  $3\frac{1}{4}$ ; and Barry,  $2\frac{1}{2}$  to  $3\frac{1}{4}$ ; Rio Tinto, 18 $\frac{1}{4}$  to 18 $\frac{3}{4}$ ; Tharsis, 5 $\frac{1}{2}$ .

GLASGOW, WEDNESDAY.—Market quiet and steady. Scotch pig iron at 46s. 10d. cash, also at 47s. one month; closing with buyers at 46s. 9 $\frac{1}{2}$ d. cash, sellers ask 46s. 10d. Cleveland done at 38s. 4d. also at 38s. 6d. one month; closing with buyers at 38s.  $3\frac{1}{2}$ d. Sellers ask 38s.  $4\frac{1}{2}$ d. Cumberland hematite closes with buyers at 7d. cash, sellers ask 48s. 8d. Middlesbrough hematite closes with buyers at 46s. cash, sellers ask 46s. 0 $\frac{1}{2}$ d.

### LIVERPOOL OIL AND COLOUR MARKET.

WEDNESDAY.

OILS.—Palm oil is quiet, with only a small business doing in Lagos at  $\pounds 19$ . 2s. 6d. per ton, for delivery over this month. Olive is steady, though rather quiet; prices are firm, with a moderate activity in Spanish. There is no change in the price of linseed, Liverpool makes being still quoted 19s. 9d. to 21s. per cwt., in export casks. Cottonseed is firm, with Liverpool refined at 17s. to 17s. 6d. per cwt. There is a rather better inquiry for castor oil, though prices are unaltered; good seconds Calcutta being quoted at  $2\frac{1}{4}$ d. to  $2\frac{1}{2}$ d.; first pressure French  $2\frac{3}{4}$ d. to  $2\frac{1}{2}$ d. per lb. Tallow has not recovered from the holidays yet, and is very dull, without any change in prices. There is a moderate demand for resin at the old values, but, with the exception of the small spot demand, business is very quiet. Spirits of turpentine are rather quiet. There has been a small spot inquiry, and as yet sellers remain firm at 21s. 3d. per cwt. Petroleum is steady, with American at  $6\frac{1}{4}$ d. to  $7\frac{1}{2}$ d., and Russian refined  $5\frac{3}{4}$ d. per gallon.

COLOURS are steady, without alteration in prices. Ochres: Oxfordshire, common,  $\pounds 10$ ., medium,  $\pounds 12$ ., best,  $\pounds 15$ . Derbyshire, common, 40s.; medium, 50s., best, 60s.; Welsh, best, 90s., seconds, 50s., and common, 18s.; Irish, Devonshire, 40s. to 45s.; French, J.C., 60s. to 65s.; M.C., 65s. to 67s. 6d. Umber: Turkish quiet; Devonshire, 50s. to 55s. White lead,  $\pounds 16$ . Red lead unchanged. Venetian red,  $\pounds 6$ . to  $\pounds 10$ . Cobalt: Prepared oxide, 9s. 9d.; black, 9s.; blue, 6s. Zaffres: No. 1, 3s. 6d.; No. 2, 2s. 6d. Oxide of iron: Common,  $\pounds 7$ .; medium,  $\pounds 10$ .; finest,  $\pounds 20$ . Zinc oxide,  $\pounds 22$ . 10s. to  $\pounds 25$ .

### TYNE CHEMICAL REPORT.

TUESDAY.

Chemicals remain in much the same position, though there is rather more shipping. Soda crystals,  $\pounds 2$ . 2s. 6d. per ton, gross weight, locally. Caustic, 76/77%,  $\pounds 9$ . 5s. per ton; 70%,  $\pounds 7$ . 10s. to  $\pounds 7$ . 15s. per ton. Sulphur,  $\pounds 3$ . 17s. 6d. per ton. Other articles unchanged.

Bleaching powder, softs,  $\pounds 7$ . 5s. per ton, nett; hards,  $\pounds 7$ . 10s. per ton, nett; caustic soda, 76/77%,  $\pounds 9$ . 5s. per ton, nett; do., 70%,  $\pounds 7$ . 15s. per ton, nett; recovered sulphur, 2 cwt. bags,  $\pounds 3$ . 17s. 6d. per ton, nett; soda ash, 48%,  $\pounds 4$ . per ton, nett; do., 50%,  $\pounds 4$ . 3s. 4d. per ton, nett; do., 52%,  $\pounds 4$ . 6s. 8d. per ton, nett; alkali, 36%,  $\pounds 2$ . 15s. per ton, nett; white alkali, 48%,  $\pounds 4$ . 10s. per ton, nett; do., 50%,  $\pounds 4$ . 15s. per ton, nett; do., 52%,  $\pounds 5$ . per ton, nett; hyposulphite of soda, 5-7 cwt. casks,  $\pounds 6$ . 5s. per ton, nett; do., 1 cwt. kegs,  $\pounds 7$ . per ton, nett; silicate of soda, 75° Tw.,  $\pounds 2$ . 12s. 6d. per ton, nett; do., 100° Tw.,  $\pounds 3$ . per ton, nett; do., 140° Tw.,  $\pounds 3$ . 7s. 6d. per ton, nett; soda crystals, casks,  $\pounds 2$ . 2s. 6d. per ton, gross weight; do., 2 cwt. bags,  $\pounds 2$ . 2s. 6d. per ton, nett weight; chlorate of potash, 5d. per lb., less 6%; pearl hardening,  $\pounds 3$ . per ton, nett; pure white sulphate of alumina,  $\pounds 3$ . 17s. 6d. per ton, nett; blanc fixe,  $\pounds 7$ . 5s. per ton, nett; chloride of barium, refined crystals,  $\pounds 6$ . 15s., per ton, nett; do., 90/95%, crude calcined,  $\pounds 6$ . per ton, nett; sulphide of barium, crystals,  $\pounds 4$ . 15s. per ton, nett; carbonate of alumina,  $\pounds 30$ . per ton, nett; aluminate of soda,  $\pounds 30$ . per ton, nett.

SALT.—South Durham in better demand, at 9s. to 9s. 6d. per ton, f.o.b. Tees.

COALS have been in rather better demand, and with the opening of the Baltic larger shipments are anticipated. Coke is firm, and the demand seems to be still increasing. Prices to-day are:—Best Northumbrian steam, 8s. to 8s. 6d. per ton; second qualities, 7s. to 7s. 6d. per ton; small steam, 3s. 9d. to 4s. per ton; bunker coals, unscreened, 6s. 3d. to 6s. 9d. per ton; gas coals, 7s. to 7s. 3d. per ton; household coals, 10s. to 10s. 6d.; coke, very steady, 14s. 6d. to 15s. per ton.

### WEST OF SCOTLAND CHEMICALS.

GLASGOW, TUESDAY.

The spring holidays have interrupted business considerably, and at the same time checked production to a slight extent, but the normal position is now being regained. There is a fair average of business passing, and despatch for the Baltic upper ports is now beginning to take shape, much of the stowage space available being already bespoken. Prices are not as yet affected in any way as regards the standard chemicals, and in the others there are one or two changes only. Sulphate of ammonia continues to droop, and last week the unprecedentedly low mark of  $\pounds 7$ . 17s. 6d. was touched for spot Leith. Production has been very large, and stocks in some cases are excessive. In the mineral oil and paraffin sections the only change is the gradual extinction of the call for burning oil with the advance of the season. Prices, however, are not at all affected, and makers are busy stocking.

Chief prices current are:—Soda crystals,  $\pounds 2$ . 2s. 6d., nett, Tyne;



soda ash, 48/56°, £3. 15s. to £4. 15s. nett, Tyne; white alkali, 48/52°, £4. 10s. to £5. nett, Tyne; alum in lump, £5. to £5. 5s. nett, Glasgow; caustic soda, white, 74° £8. 7s. 6d., 70/72° £7. 7s. 6d., 60/62° £6. 7s. 6d., and cream 60/62° £6. 7s. 6d., all nett, Liverpool; bleaching powder, £7. nett, Tyne; saltcake, 24s.; borax, English, refined, £20., and boracic acid, £30. nett, Glasgow; bicarbonate of soda, 5-cwt. casks, £6. 10s., and 1-cwt. casks £6. 15s. nett, Liverpool; bichromate of potash, 4½d. nett, for Scotch and English deliveries (for export, 4½d. nett, f.o.b. Glasgow); bichromate of soda, 3½d. nett, for Scotch and English deliveries (for export, 3½d. nett, f.o.b. Glasgow); chlorate of potash, 4½d. less 5%, Liverpool; nitrate of soda, 8s. to 8s. 3d.; sulphate of ammonia, £8. to £8. 1s. 3d., prompt, f.o.b. Leith; salammioniac, first and second white, £39. and £37. nett, any port; sulphate of copper, £18. 10s. to £18. 15s., less 5%, Liverpool; paraffin scale, hard, 1½d., and soft, 1½d. to 1½d. per lb.; paraffin wax, 120° semi-refined, 2½d. to 2½d.; paraffin spirit (naphtha), 7d. per gallon; paraffin oil (burning) No. 1, 6½d., and crystal, 6½d., at works, for Scotch buyers (English sales about ½d. lower); ditto (lubricating) 865° £5., 885° £5. 10s. to £6., and 890/895° £6. to £6. 10s. Week's imports of sugar at Greenock were nil.

## New Companies.

"H.B." Linseed Oil Co., Ltd.—CAPITAL, £40,000., in £1. shares. This company has been formed to acquire certain patents relating to improvements in manufacturing and refining pale boiled oil, etc., and the interest therein of the "H.B." Oil Syndicate, Limited, upon the terms of an agreement made by this company with the said "H.B." Oil Syndicate, Limited, and to carry on business as seed crushers, oil refiners, etc., oil and colour men, etc.

W. R. Hatton and Sons, Limited.—CAPITAL, £25,000 in £1. shares. This company has been formed to carry on the business of

W. R. Hatton and Sons, Wormwood Scrubbs, and trade as ch soap, and laundry requisite manufacturers.

Mineral Oils Corporation, Limited.—CAPITAL £120,000 £10. shares. This company has been formed to carry on the business of oil refiners, dealers, merchants, carriers, factors, and etc. The subscribers to the memorandum of association are: C. Hunting, 1, Exchange Buildings, Newcastle, shipowner; Hunting, 1, Exchange Buildings, Newcastle, shipowner; Arthur, Victoria-road, Clapham, lieutenant-col.; J. Duffield, A. Royton, ironmaster; E. A. Gibson, 30, Great St. Helens, broker; W. J. Eltringham, 40, Stanton-road, Newcastle, second J. Turnbull, Whickham, co. Durham, clerk.

Lyons' Inks, Limited.—CAPITAL £20,000., in 2,000 5% once cumulative shares of £5 each, and 10,000 ordinary £1. The company has been formed to acquire and carry on the business of ink, sealing wax, and gum manufacturers, now carried on by J. at Park-street, Manchester, and London. The subscribers memorandum of association are:—J. Lyons, Park-street, Manchester, ink manufacturer; J. H. Peters, 62, King-street, Manchester, soap; H. Simmons, 71, King-street, Manchester, chartered accountant; W. Orme, Wellington-road, Stockport, solicitor; T. Collier, V Park, Manchester, manager; G. Kilvert, 32, Trafalgar-road, Bir gentleman; Mrs. F. S. Lyons, 12, Grosvenor-road, Birkdale.

## Gazette Notices.

### PARTNERSHIPS DISSOLVED.

W. E. NAVLOR, H. S. NAVLOR, and J. P. QUICK, varnish manufacturers, James-street, Oxford-street, W., and Southall, under the style of Nayl and Quick.

T. WALTON and R. WALTON, flint glass manufacturers, Newton-le-Wharf, under the style of Walton and Co.

## IMPORTS OF CHEMICAL PRODUCTS

AT

### THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

#### LONDON.

Week ending March 28th.

|                          |                            |
|--------------------------|----------------------------|
| <b>Acetic Acid—</b>      |                            |
| Holland, 120 pks.        | A. & M. Zimmermann         |
| <b>Acetone—</b>          |                            |
| Germany, 1 dm.           | H Lorenz                   |
| <b>Ammonia—</b>          |                            |
| E. Indies, 9 cks.        | L. & I. D. Jt. Co.         |
| <b>Ammonium Nitrate—</b> |                            |
| Germany, 17 cks.         | Petri Brs.                 |
| <b>Antimony Ore—</b>     |                            |
| Corsica, 50 t.           | J. Bamber                  |
| <b>Arachide Oil—</b>     |                            |
| France, 30 brls.         | C. S. Lovell               |
| <b>Asbestos—</b>         |                            |
| Holland, £25             | Brasch & Rothenstein       |
| Germany, 12              | T. H. Lee                  |
| <b>Barium Chloride—</b>  |                            |
| Germany, 23 cks.         | Petri Brs.                 |
| <b>Barytes—</b>          |                            |
| Germany, 19 cks.         | E. J. Diggins              |
| Holland, 21              | W. Pope & Co.              |
| Belgium, 107             | J. L. Lyon & Co.           |
| "                        | 192 pks. W. Harrison & Co. |
| "                        | E. J. Diggins              |
| Germany, 114             | W. Harrison & Co.          |
| <b>Bleaching Soda—</b>   |                            |
| Germany, 104 c.          | H. Lambert                 |
| <b>Boracic Acid—</b>     |                            |
| Italy, 12 cks.           | City Coml. Wf. Co.         |
| <b>Camphor—</b>          |                            |
| China, 100 cs.           | City Coml. Wf. Co.         |
| "                        | 103 H. A. Litchfield & Co. |
| Hong Kong, 100           | R. Warner & Co.            |
| Japan, 101               | tubes Prop. Hay's Wf.      |
| Germany, 103             | S. Figgis & Co.            |
| <b>Caoutchouc—</b>       |                            |
| Germany, 45 c.           | Anderson, Weber & Co.      |
| "                        | S. Figgis & Co.            |
| Aden, 7                  | Forbes, Forbes & Co.       |
| Germany, 212             | "                          |

|                                      |                        |
|--------------------------------------|------------------------|
| Aden, 28                             | Wallace Brs.           |
| Germany, 75                          | Clarke & Smith         |
| "                                    | 12 Prop. Bull Wf.      |
| "                                    | 105                    |
| U. States, 61                        | Chautard & Christensen |
| "                                    | 20                     |
| Zanzibar, 97                         | L. & I. D. Jt. Co.     |
| France, 6                            | H. Johnson & Sons      |
| U. States, 40                        | L. & I. D. Jt. Co.     |
| Natal, 53                            | "                      |
| Tamatave, 41                         | "                      |
| "                                    | 41 Procter Brs.        |
| Cape, 320                            | Hammond & Co.          |
| Rangoon, 7                           | Steel Brs. & Co.       |
| "                                    | 55 L. & I. D. Jt. Co.  |
| Thursday Is., 4                      | McIlwraith & Co.       |
| Portugal, 31                         | L. & I. D. Jt. Co.     |
| France, 50                           | W. Balchin             |
| Belgium, 50                          | "                      |
| <b>Carbolic Acid—</b>                |                        |
| Holland, 9 cks.                      | J. Owen                |
| <b>Carbonic Acid Gas—</b>            |                        |
| Holland, 100 pks.                    | Phillips & Graves      |
| <b>Castor Oil—</b>                   |                        |
| Italy, 10 cs.                        | Langton, Edden & Co.   |
| E. Indies, 100                       | Anderson, Weber & Co.  |
| Italy, 5                             | R. Quincey & Son       |
| <b>Caustic Potash—</b>               |                        |
| Belgium, 5 drs.                      | Petri Brs.             |
| <b>Chemicals (otherwise under.)—</b> |                        |
| Germany, £492                        | A. & M. Zimmermann     |
| Belgium, 98                          | T. Palmer              |
| France, 42                           | Flageollet & Co.       |
| Germany, 247                         | Phillips & Graves      |
| Holland, 4                           | "                      |
| Germany, 25                          | L. Lambert             |
| "                                    | 14 T. Palmer           |
| "                                    | 750 T. H. Lee          |
| "                                    | 48 L. & I. D. Jt. Co.  |
| <b>Cobalt Ore—</b>                   |                        |
| France, 151 t.                       | R. Waters              |
| <b>Copper Chloride—</b>              |                        |
| Holland, 2 cks.                      | Phillips & Graves      |
| <b>Copperas—</b>                     |                        |
| Germany, 8 cks.                      | A. & M. Zimmermann     |

#### Cream of Tartar—

|                     |                                   |
|---------------------|-----------------------------------|
| Spain, 5 cks.       | B. & F. Wf. Co.                   |
| Italy, 15           | A. E. Piggott                     |
| Holland, 21         | Union L. Co.                      |
| France, 3           | Kirkpatrick & Co.                 |
| "                   | 5 B. & F. Wf. Co.                 |
| <b>Dextrine—</b>    |                                   |
| Germany, 150 bgs.   | J. Barber & Co.                   |
| "                   | 50 Seaward Brs.                   |
| "                   | 30 R. G. Hall & Co.               |
| <b>Dyestuffs—</b>   |                                   |
| <b>Aniline</b>      |                                   |
| Holland, 1 pk.      | L. C. & D. Rly.                   |
| <b>Annatto</b>      |                                   |
| Norway, 1 kg.       | Johnsen & Jorgensen               |
| Ceylon, 40 cs.      | Hoare, Wilson & Co.               |
| France, 12 cks.     | B. & F. Wf. Co.                   |
| Italy, 13 pks.      | Thames S. T. & L. Co.             |
| <b>Cochineal</b>    |                                   |
| Canaries, 15 bgs.   | W. M. Smith & Sons                |
| "                   | 4 G. S. Bruce                     |
| <b>Cutch</b>        |                                   |
| Rangoon, 1,000 bxs. | A. Howden & Co.                   |
| "                   | 500 T. Ronaldson & Co.            |
| "                   | 3,500 Leach & Co.                 |
| "                   | 166 Arracan Co., Ltd.             |
| "                   | 920 Hicks, Nash & Co.             |
| "                   | 956 P. Peydemann                  |
| <b>Divi Divi</b>    |                                   |
| E. Indies, 64 bgs.  | Flack, Chandler & Co.             |
| "                   | 95 Culverwell, Brooks & Co.       |
| <b>Extracts</b>     |                                   |
| France, 101 pks.    | T. H. Lee                         |
| Canada, 15          | B. & F. Wf. Co.                   |
| France, 240         | A. J. Humphery                    |
| "                   | 510 cks. Boucher, Mortimore & Co. |
| Denmark, 6 cs.      | Perkins & Homer                   |
| France, 85          | L. J. Levinstein & Sons           |
| U. States, 60       | A. J. Humphery                    |
| Belgium, 25         | 100 bxs. Skilbeck Brs.            |
| Ceylon, 3 cs.       | Leach & Co.                       |
| <b>Indigo</b>       |                                   |
| E. Indies, 50 cts.  | R. von Glehn & Sons               |

|                       |               |                    |
|-----------------------|---------------|--------------------|
| "                     | 11            | Tay                |
| "                     | 9             | P. Hey             |
| "                     | 71            |                    |
| "                     | 110           | Croydall           |
| "                     | 49            | Parr               |
| "                     | 10            | J. Kenyon          |
| "                     | 81            | Parsons            |
| "                     | 5             | P. Macfadyen       |
| "                     | 12            | J. H. Hall & Binn  |
| "                     | 7             |                    |
| "                     | 15            | Thomasse           |
| "                     | 62            | Ross & Art         |
| "                     | 48            | Lathall            |
| "                     | 6             | W. Franc           |
| "                     | 24            | Elks               |
| "                     | 16            | E. Bows            |
| "                     |               | 6 bxs. Mont        |
| "                     | 23            | H. W. Jett         |
| "                     | 15            | Young,             |
| "                     | 62            | Patry & A. B. Curt |
| "                     | 6             | S. Figgis          |
| "                     | 10            | F. Claydon         |
| "                     | 11            | L. & I. D.         |
| "                     | 709           | Laughland, I       |
| "                     | 6             | 2 cs. P & Lewis    |
| "                     | 60            | J. Hatton Hal      |
| "                     | 76            | 19 cs Stat         |
| "                     | 57            | J. H. Bows         |
| "                     | 10            | H. J. Peribad      |
| "                     | 54            |                    |
| <b>Myrabolams</b>     |               |                    |
| E. Indies, 1,366 bgs. | R. G. Hall    |                    |
| " 1,000 pks.          | A. B.         |                    |
| " 101                 | Hoare, Wilson |                    |
| " 1,000 pkts.         | Monty         |                    |
| " 1,191 bgs.          | L.            |                    |
| " 2 999               | P. &          |                    |
| <b>Saffron</b>        |               |                    |
| Spain, 1 cs.          | C. Brumlen    |                    |
| <b>Tanner's Bark</b>  |               |                    |
| Adelaide, 14 t.       | Baxter &      |                    |
| Natal, 53             | Boucher, M    |                    |
| Belgium, 50           | S. Barrow     |                    |



**Mercuric**  
any, 230 bgs. R. Warner & Co.  
**Mercuric**  
any, 30 t. J. Graves  
any, 25 Adam Bros.  
any, 50 F. Claydon & Co.  
any, 100 T. J. & T. Powell  
any, 26 A. & W. Nesbitt  
any, 1 T. H. Lee  
any, 55 W. H. Mitchell  
any, 134 Anning & Cobb  
any, 61 Marshall & French  
any, 134 Hicks, Nash & Co.

**any**  
any, 230 bgs. Seaward Bros.  
**any**  
any, 240 Harrison & Co.  
**any**  
any, 10 cs. Chapman, Anthony, & Co.  
**any**  
any, 350 pks. 603 c. W. Balchin  
any, 15 75 M. D. Co.  
any, 200 1,227 Union L. Co., Ltd.  
any, 55 500 Bennett  
any, 200 200 Trier, Meyer, & Co.  
any, 25 210 R. G. Hall & Co.  
any, 100 J. Barber & Co.  
any, 25 210 J. Knill & Co.  
any, 1,891 1,891 Fellows,  
any, 250 65 L. Sutor & Co.  
any, 400 400 L. Norman & Co., Ltd.  
any, 1,370  
any, 3 t. Culverwell, Brooks, & Co.

**any**  
any, 50 t. F. W. Berk & Co.  
**any**  
any, 84 cs. M. D. Co.  
any, 100 hds. J. Melvin  
any, 50 cks. H. & F. Raison  
**any**  
any, 15 cks. R. Greening  
any, 15 cs. F. Boehm  
**any**  
any, 3 cks. Petri Bros.  
**any**  
any, 118 cks. Berger, Kahler, & Co.

**any**  
any, 150 t. Anglo-Contl. G. Wks.  
any, 2 L. & I. D. Jt. Co.  
any, 300 A. Hunter & Co.  
any, 48 Co-op. Lightgr. Association, Ltd.

**any**  
any, 135 brls. J. Whaley  
**any**  
any, 10 pks. W. E. Bott & Co.  
any, 125 E. Davis & Co.  
any, 5 R. G. Hall & Co.  
any, 1,965 W. M. Smith & Sons  
**any**  
any, 34,340 c. J. R. Francis & Co.  
**any**  
any, 3 cks. 23 pks. Philipps & Graves  
any, 30 Hernu, Peron, & Co.  
any, 19 Prop. Hay's Wf.  
any, 40 W. Harrison & Co.  
any, 12 Philipps & Graves

**any**  
any, 800 t. West & Penrose  
any, 145 Odams Manure Co.  
any, 200 T. Ronaldson & Co.  
any, 48 Anglo-Contl. G. Wks.  
**any**  
any, 148 t. A. Hunter & Co.  
any, 425 Pickford & Winkfield  
any, 30 T. Ronaldson & Co.  
any, 10 E. A. & H. Nichols  
any, 40 B. Jacob & Sons  
any, 17 Anglo-Contl. G. Wks.  
any, 230 D. de la Pass & Co.  
**any**  
any, 150 t. Seaward Bros., Ltd.  
**any**  
any, 5 brls. T. H. Lee  
**any**  
any, 104 cks. C. Rowbotham

**Germany**  
any, 125 L. & I. D. Jt. Co.  
any, 100 R. G. Hall & Co.  
any, 112 J. Thredder, Son, & Co.  
any, 168 Craven & Co.  
any, 38 J. Owen  
any, 600 J. Greig  
**Potash**  
any, 19 cks. A. & M. Zimmermann  
**Potassium Bicarbonate**  
any, 65 c. J. A. Reid  
any, 7 cks. Petri Bros.  
any, 94 W. G. Blagden  
**Potassium Oxymuriate**  
any, 10 kgs. G. Boor & Co.  
**Pumice Stone**  
any, 3 t. 10 c. O'Hara & Hoar  
any, 10 W. J. Davies & Sons  
any, 1,950 t. R. England & Co.  
any, 1,366 Anderson, Anderson, & Co.  
any, 1,500 Naylor, Benson, & Co.  
**Pyrites**  
any, 850 bgs. Perkins & Homer  
any, 620 Lucas & Spencer's Wf.  
any, 245 Co-op. Lightgr. Association  
any, 20 cks. T. H. Lee  
**Saltpetre**  
any, 27 cks. H. Lorenz  
**Sodium Acetate**  
any, 80 cks. R. W. Greeff & Co.  
**Sodium Hyposulphite**  
any, 18 brls. D. C. Thomas & Sons  
**Sodium Prussiate**  
any, 150 cs. Seaward Bros.  
any, 50 Philipps & Graves  
any, 100 bgs. R. G. Hall & Co.  
any, 5 brls. Beck & Pollitzer  
any, 100 bgs. Little & Johnston  
any, 536 cs. J. Barber & Co.  
any, 40 F. Claydon & Co.  
any, 179 Sawyer, Sons, & Co.  
any, 120 Leach & Co.  
any, 160 A. Dunn  
any, 300 W. E. Cole  
any, 168 Philipps & Graves  
any, 290 E. & T. Pink  
any, 10 T. H. Lee  
any, 670 20 cks. Horne & Co.  
any, 314 320 brls. T. H. Lee  
any, 800 E. & T. Pink  
**Starch**  
any, 130 bgs. Walbaum & Tosetti  
any, 6 cks. Mory & Co.  
**Sulphur**  
any, 35 t. P. Hecker & Co.  
**Sulphur Chloride**  
any, 20 pks. Typke & King  
**Talc**  
any, 100 pks. Brash & Rothenstein  
**Tartaric Acid**  
any, 12 pks. B. & F. Wf Co.  
any, 4 F. C. Devon & Co.  
any, 4 H. Lorenz  
any, 10 Kirkpatrick & Co.  
any, 10 F. Smith  
**Ultramarine**  
any, 34 pks. Hernu, Peron, & Co.  
any, 4 cks. Elkan & Co.  
any, 4 J. L. Lyon & Co.  
any, 4 brls. Leach & Co.  
**Varnish**  
any, 30 pks. Taylor Bros.  
any, 12 T. H. Lee  
any, 32 Locust Paint Co.  
any, 2 Flageolet & Co.  
**Verdigris**  
any, 4 cks. C. F. Gerhardt  
**White Lead**  
any, 23 cks. N. J. Fenner & Co.  
any, 97 J. L. Lyon & Co.  
any, 20 Perkins & Homer  
any, 58 W. & A. Hampton  
any, 18 J. Watt & Son  
any, 28 F. G. Clifford  
any, 25 M. Ashby, Ltd.  
any, 37 D. Storer & Sons  
any, 13 H. Lambert

**Wood Pulp**  
any, 1,405 pks. E. J. & W. Goldsmith  
any, 200 C. S. Lovell  
any, 2,788 J. Sharp  
any, 2,210 E. J. & W. Goldsmith  
any, 510 W. Friedlaender  
any, 154 Johnsen & Jorgensen  
any, 80 L. & I. D. Jt. Co.  
**Zinc Oxide**  
any, 5 cks. W. Pope & Co.  
any, 125 brls. M. Ashby Ltd.  
any, 10 cks. Beresford & Co.  
any, 50 brls. M. Ashby, Ltd.  
**Zinc Sulphate**  
any, 6 cks. Stobbs, Wilson, & Co.  
any, 40 bgs. G. Boor & Co.  
**Zinc White**  
any, 100 cks. Burrell & Co.

**LIVERPOOL.**  
Week ending March 26th.  
**Albumen**  
any, 2 cs.  
**Asbestos**  
any, 400 bgs. St. John, N.B.  
**Barytes**  
any, 50 brls. Antwerp  
**Bone Ash**  
any, 400 bgs. B. Ayres  
**Bone Meal**  
any, 1,120 bgs. Calcutta  
any, 130 Rangoon  
**Boric Acid**  
any, 150 cks. Leghorn  
**Borate of Lime**  
any, 2,600 bgs. Antofagasta  
any, Lafuente Walker  
**Borax**  
any, 560 sks. Valparaiso  
any, 594 Valparaiso  
**Caoutchouc**  
any, 17 bbls. Valparaiso  
any, W. Brandt, Sons & Co.  
**Castor Oil**  
any, 250 cs. Calcutta  
**Chemicals (otherwise undeciphered)**  
any, 2 cs. Rotterdam  
**Colours**  
any, 13 cks. 1 cs. Hamburg  
any, 1 Rotterdam  
**Cottonseed Oil**  
any, 12 brls. New York  
any, 100 M. Bell  
**Cream of Tartar**  
any, 2 cks. Rotterdam  
**Dextrine**  
any, 10 bgs. T. M. Mullan & Co.  
**Dried Blood**  
any, 1,845 bgs. B. Ayres  
**Dyestuffs**  
any, 1,000 bxs. Rangoon  
any, 5,040 Baring Bros. & Co.  
**Divi Divi**  
any, 338 bgs. Havre  
**Indigo**  
any, 322 cts. 2 bxs. Calcutta  
**Logwood**  
any, 91y. Havre  
**Orchella**  
any, 188 bbls. Lisbon  
**Shumac**  
any, 80 bbls. Bordeaux  
any, 250 bgs. Palermo  
**Valonia**  
any, 1,050 bgs. Constantinople  
**Dyestuffs (otherwise undeciphered)**  
any, 1,955 pps. Tampico  
**Farina**  
any, 50 bgs. Harlingen  
**Glucose**  
any, 100 brls. New York  
any, 250 T. M. Duche & Sons  
any, 200 Boston  
**Glue**  
any, 2 cs. Rotterdam  
**Iodine**  
any, 42 brls. A. Gibbs & Sons

**Lead Acetate**  
any, 9 cks. Stettin  
**Litharge**  
any, 8 cks. Rotterdam  
**Manganese Ore**  
any, 999 t. Vizagapatam  
any, Darwen & Mostyn Iron Co.  
**Ochre**  
any, 135 brls. Port Royal  
**Paraffin Scale**  
any, 1,873 brls. New York  
any, Thompson & Bedford  
**Phosphates**  
any, 100 Baltimore  
**Phosphoric Acid**  
any, 250 bgs. Ghent  
any, 15 cs. Hamburg  
**Pyrites**  
any, 5,013 t. Huelva  
any, Matheson & Co.  
**Rosin**  
any, 6,474 brls. Savannah  
any, 300 Baltimore  
any, 552 Boston  
any, 6 cs. Hamburg  
**Salt**  
any, 1 bg. Hamburg  
**Saltpetre**  
any, 659 bgs. Calcutta  
any, 754 Ralli Bros.  
any, 180 Karachi  
any, 8 cks. 40 kgs. 2 brls. Hamburg  
**Silver Sulphide**  
any, 8 cs. Valparaiso  
**Soap**  
any, 5 cs. Marseilles  
any, 20 Leghorn  
any, 6 cs. Boston  
any, W. Toggitt  
**Soapstone**  
any, 302 bgs. 9 cs. Bordeaux  
any, G. G. Blackwell, Sons & Co.  
**Starch**  
any, 500 bgs. New York  
any, 1,000 sks. Baltimore  
any, 120 cs. Rotterdam  
**Stearine**  
any, 25 bgs. Antwerp  
**Sulphur**  
any, 125 bgs. Catania  
**Sulphur Ore**  
any, 1,428 t. Huelva  
any, Matheson & Co.  
**Tallow**  
any, 113 hds. 100 tcs. New York  
any, 67 Boston  
any, 281 cks. B. Ayres  
any, 200 30 brls. Portland  
any, 120 Campana  
**Tartar**  
any, 20 cks. Bordeaux  
any, 3 sks. Valparaiso  
**Tartaric Acid**  
any, 20 cs. Marseilles  
any, 7 cks. Rotterdam  
**Treacle**  
any, 100 cks. Hamburg  
any, 50 brls. Boston  
**Ultramarine**  
any, 20 cks. Rotterdam  
**Varnish**  
any, 2 cks. Rotterdam  
**White Lead**  
any, 3 cks. Stettin  
any, 65 Rotterdam  
**Wood Pulp**  
any, 200 bbls. Oporto  
**Zinc Ashes**  
any, 2 cts. Antwerp  
**Zinc Oxide**  
any, 11 cks. 20 brls. Antwerp  
**Zinc White**  
any, 200 cks. Rotterdam

**MANCHESTER.**  
Week ending March 28th.  
**Alizarine**  
any, 17 cks. 1 cs. Rotterdam  
**Aluminium**  
any, 1 ck. Hamburg  
**Ammonium Chloride**  
any, 1 ck. Hamburg  
**Barium Chlorate**  
any, 1 ck. Hamburg  
**Barium Chloride**  
any, 10 cks. Rotterdam



|                             |                            |
|-----------------------------|----------------------------|
| <b>Colours—</b>             |                            |
| Hamburg,                    | 10 cks.                    |
| Rotterdam,                  | 82 43 cs. 6 bxs.           |
| Antwerp,                    | 28 brls. 10 pks.           |
| <b>Extracts—</b>            |                            |
| Rotterdam,                  | 10 cks.                    |
| Treport,                    | 5                          |
| Hamburg,                    | 10                         |
| <b>Farina—</b>              |                            |
| Rotterdam,                  | 50 bgs.                    |
| <b>Glue—</b>                |                            |
| Treport,                    | 10 bls.                    |
| Rouen,                      | 12 51 cks. 10 cs.          |
| Hamburg,                    | 15                         |
| Rotterdam,                  | 80 bgs. 26                 |
| Antwerp,                    | 4                          |
| <b>Limestone—</b>           |                            |
| Antwerp,                    | 2 cs. J. T. Fletcher & Co. |
| "                           | 3 cts.                     |
| <b>Litharge—</b>            |                            |
| Rotterdam,                  | 28 cks.                    |
| <b>Manganese Chloride—</b>  |                            |
| Hamburg,                    | 1 ck.                      |
| <b>Minium—</b>              |                            |
| Rotterdam,                  | 9 cks.                     |
| <b>Pitch—</b>               |                            |
| Hamburg,                    | 62 brls.                   |
| Antwerp,                    | 21 cks.                    |
| <b>Potash—</b>              |                            |
| Antwerp,                    | 16 dms.                    |
| <b>Potassium Carbonate—</b> |                            |
| Hamburg,                    | 1 ck.                      |
| <b>Saltpetre—</b>           |                            |
| Hamburg,                    | 2 brls.                    |
| <b>Sodium Nitrate—</b>      |                            |
| Rotterdam,                  | 7 cks.                     |
| <b>Starch—</b>              |                            |
| Rotterdam,                  | 50 cs.                     |
| Hamburg,                    | 560                        |
| Ghent,                      | 38 J. T. Fletcher & Co.    |
| "                           | 20                         |
| Antwerp,                    | 253                        |
| <b>Sulphuric Acid—</b>      |                            |
| Rotterdam,                  | 10 dms.                    |
| <b>Ultramarine—</b>         |                            |
| Rotterdam,                  | 2 cks.                     |
| <b>White Lead—</b>          |                            |
| Rotterdam,                  | 6 cks.                     |
| Antwerp,                    | 7                          |
| <b>Wood Pulp—</b>           |                            |
| Rotterdam,                  | 100 pks.                   |
| Gothenburg,                 | 4,896 bls.                 |
| Christiania,                | 80                         |
| Drammen,                    | 1,473 W. H. Ingram         |
| <b>Zinc Ashes—</b>          |                            |
| Antwerp,                    | 22 cks.                    |
| <b>Zinc Oxide—</b>          |                            |
| Antwerp,                    | 10 brls.                   |
| <b>Zinc White—</b>          |                            |
| Rotterdam,                  | 10 brls.                   |

**HULL.**

Week ending March 28th.

|                                      |                                     |
|--------------------------------------|-------------------------------------|
| <b>Antimony—</b>                     |                                     |
| Dunkirk,                             | 3 cks. Wilson, Sons, & Co., Ltd.    |
| <b>Arsenic—</b>                      |                                     |
| Hamburg,                             | 100 brls. Wilson, Sons, & Co., Ltd. |
| <b>Barytes—</b>                      |                                     |
| Antwerp,                             | 18 cks. Bailey & Leatham            |
| "                                    | 200 bgs. 105 H. F. Pudsey           |
| Rotterdam,                           | 182 pks. W. & C. L. Ringrose        |
| <b>Camphor—</b>                      |                                     |
| Hamburg,                             | 1 ck. Wilson, Sons, & Co., Ltd.     |
| <b>Castor Oil—</b>                   |                                     |
| Antwerp,                             | 20 cks. Bailey & Leatham            |
| <b>Chemicals (otherwise undes.)—</b> |                                     |
| Hamburg,                             | 9 pks. Wilson, Sons, & Co., Ltd.    |
| Dunkirk,                             | 4 cks.                              |
| Hamburg,                             | 1 ck. Bailey & Leatham              |
| Danzig,                              | 30 pks. W. & C. L. Ringrose         |
| <b>Cod Oil—</b>                      |                                     |
| Drontheim,                           | 3 cs. Wilson, Sons, & Co., Ltd.     |
| Christiansund,                       | 32 brls.                            |
| Aalesund,                            | 93                                  |
| Bergen,                              | 1 bx. 113                           |

|                        |                                          |
|------------------------|------------------------------------------|
| <b>Colours—</b>        |                                          |
| Antwerp,               | 24 pks. Wilson, Sons, & Co., Ltd.        |
| Bremen,                | 3 cks. Veltmann & Co.                    |
| "                      | 4 W. H. Walton & Co.                     |
| Rotterdam,             | 68 T. & J. Seddon                        |
| "                      | 6 bxs. 25 cs.                            |
| Danzig,                | 67 brls. W. & C. L. Ringrose             |
| <b>Cottonseed Oil—</b> |                                          |
| New York,              | 100 brls. Wilson, Sons, & Co., Ltd.      |
| <b>Dextrine—</b>       |                                          |
| Stettin,               | 190 bgs. Wilson, Sons, & Co., Ltd.       |
| <b>Dyestuffs—</b>      |                                          |
| Rotterdam,             | 19 cks. W. & C. L. Ringrose              |
| <b>Annatto</b>         |                                          |
| New York,              | 50 bgs. Wilson, Sons, & Co., Ltd.        |
| <b>Argols</b>          |                                          |
| Bordeaux,              | 65 cks. Wilson, Sons, & Co., Ltd.        |
| <b>Indigo</b>          |                                          |
| Hamburg,               | 1 ck. Wilson, Sons, & Co., Ltd.          |
| <b>Farina—</b>         |                                          |
| Antwerp,               | 25 bgs. Wilson, Sons, & Co., Ltd.        |
| Stettin,               | 350                                      |
| Ghent,                 | 156 cs. 14                               |
| Antwerp,               | 50 Bailey & Leatham                      |
| <b>Fluoric Acid—</b>   |                                          |
| Hamburg,               | 5 cs. Bailey & Leatham                   |
| <b>Glucose—</b>        |                                          |
| New York,              | 250 bgs. Wilson, Sons, & Co., Ltd.       |
| Stettin,               | 10 cks.                                  |
| <b>Glue—</b>           |                                          |
| Dunkirk,               | 73 cks. Wilson, Sons, & Co., Ltd.        |
| Rouen,                 | 51 bls. 28 40 cs. Rawson & Robinson      |
| Bergen,                | 10 brls. Wilson, Sons, & Co., Ltd.       |
| Antwerp,               | 8 pks. Bailey & Leatham                  |
| Hamburg,               | 20 bgs.                                  |
| <b>Guano—</b>          |                                          |
| Hamburg,               | 229 bgs. Wilson, Sons, & Co., Ltd.       |
| Bergen,                | 1,000                                    |
| <b>Lamp Black—</b>     |                                          |
| Antwerp,               | 21 cs. Wilson, Sons, & Co., Ltd.         |
| <b>Lime—</b>           |                                          |
| New York,              | 1,637 bgs. Wilson, Sons, & Co., Ltd.     |
| <b>Ochre—</b>          |                                          |
| Rouen,                 | 21 cks.                                  |
| <b>Paint—</b>          |                                          |
| New York,              | 46 pks. 25 cs. Wilson, Sons, & Co., Ltd. |
| Boston,                | 23 cs.                                   |
| <b>Phosphate—</b>      |                                          |
| Antwerp,               | 100 t. Wilson, Sons, & Co., Ltd.         |
| Copenhagen,            | 1 bg.                                    |
| Ghent,                 | 220 t.                                   |
| <b>Pitch—</b>          |                                          |
| Amsterdam,             | 13 cks. W. & C. L. Ringrose              |
| <b>Potash—</b>         |                                          |
| Antwerp,               | 142 dms. Wilson, Sons, & Co., Ltd.       |
| Dunkirk,               | 33 pks.                                  |
| <b>Starch—</b>         |                                          |
| Rotterdam,             | 58 cs. Hutchinson & Son                  |
| Bremen,                | 1,402 Veltmann & Co.                     |
| Amsterdam,             | 56 Hutchinson & Son                      |
| <b>Tallow—</b>         |                                          |
| Dunkirk,               | 12 cks. Wilson, Sons, & Co., Ltd.        |
| New York,              | 425 tcs.                                 |
| <b>Tartar—</b>         |                                          |
| Bordeaux,              | 2 cks. Rawson & Robinson                 |
| <b>Tartaric Acid—</b>  |                                          |
| Rotterdam,             | 4 cks. Hutchinson & Son                  |
| <b>Treacle—</b>        |                                          |
| New York,              | 425 brls. Wilson, Sons, & Co., Ltd.      |
| Boston,                | 1,800                                    |

|                     |                                    |
|---------------------|------------------------------------|
| <b>Ultramarine—</b> |                                    |
| Rotterdam,          | 2 cks. Hutchinson & Son            |
| <b>Varnish—</b>     |                                    |
| New York,           | 22 brls. Wilson, Sons, & Co., Ltd. |
| <b>Vermillion—</b>  |                                    |
| Bremen,             | 2 cks. Veltmann & Co.              |
| <b>Waste Salt—</b>  |                                    |
| Hamburg,            | 25 t. 26 bgs.                      |
| <b>White Lead—</b>  |                                    |
| Rotterdam,          | 10 cks. Hutchinson & Son           |
| Amsterdam,          | 84 W. & C. L. Ringrose             |
| Antwerp,            | 10 Bailey & Leatham                |
| <b>Wood Pulp—</b>   |                                    |
| Hango,              | 386 bls. J. Good & Sons            |
| Hamburg,            | 100 pks. Wilson, Sons, & Co., Ltd. |
| Drontheim,          | 480 bls.                           |
| <b>Zinc Oxide—</b>  |                                    |
| Antwerp,            | 50 cks. Bailey & Leatham           |
| <b>Zinc White—</b>  |                                    |
| Antwerp,            | 40 cks. Bailey & Leatham           |

**GLASGOW.**

Week ending April 2nd.

|                                          |                                       |
|------------------------------------------|---------------------------------------|
| <b>Albumen—</b>                          |                                       |
| Ghent,                                   | 10 cs.                                |
| <b>Aniline—</b>                          |                                       |
| Hamburg,                                 | 8 cks. 2 cs.                          |
| Rotterdam,                               | 8 15                                  |
| <b>Arachide Oil—</b>                     |                                       |
| Rotterdam,                               | 1 ck.                                 |
| <b>Barium Sulphate—</b>                  |                                       |
| Antwerp,                                 | 1,220 bgs. 71 cks. C. Schneider & Co. |
| <b>Barytes—</b>                          |                                       |
| Rotterdam,                               | 46 cks. J. Rankine & Son              |
| "                                        | 43 pks.                               |
| <b>Chemicals (otherwise undescribed)</b> |                                       |
| Rotterdam,                               | 1 ck. 4 cs.                           |
| <b>Citric Acid—</b>                      |                                       |
| Messina,                                 | 8 cks.                                |
| <b>Cream of Tartar—</b>                  |                                       |
| Genoa,                                   | 5 cks.                                |
| <b>Dyestuffs—</b>                        |                                       |
| Rotterdam,                               | 11 brls. J. Rankine & Son             |
| <b>Alizarine</b>                         |                                       |
| "                                        | 38 cks. 124 pks.                      |
| <b>Cutch</b>                             |                                       |
| Rangoon,                                 | 2,527 bxs.                            |
| <b>Extracts</b>                          |                                       |
| Antwerp,                                 | 1 ck.                                 |
| <b>Shumac</b>                            |                                       |
| Palermo,                                 | 150 bls. 1,150 bgs.                   |
| <b>Farina—</b>                           |                                       |
| Hamburg,                                 | 200 bgs.                              |
| <b>Manganese Ore—</b>                    |                                       |
| Madras,                                  | 200 t.                                |
| <b>Painters' Colours—</b>                |                                       |
| Antwerp,                                 | 5 cks. 1 cs.                          |
| Rotterdam,                               | 37 pks.                               |
| <b>Paraffin Wax—</b>                     |                                       |
| Philadelphia,                            | 300 brls.                             |
| <b>Pitch—</b>                            |                                       |
| Amsterdam,                               | 13 cks.                               |
| <b>Potash—</b>                           |                                       |
| Rotterdam,                               | 56 cks. J. Rankine & Son              |
| <b>Potassium Sulphate—</b>               |                                       |
| Rotterdam,                               | 6 cks. J. Rankine & Son               |
| <b>Pumice Stone—</b>                     |                                       |
| Messina,                                 | 16 cks.                               |
| <b>Sodium Nitrate—</b>                   |                                       |
| Iquique,                                 | 2,300 t. A. Cross & Sons              |
| <b>Starch—</b>                           |                                       |
| Rotterdam,                               | 10 cs. J. Rankine & Son               |
| <b>Sulphur—</b>                          |                                       |
| Catania,                                 | 1,359 bgs. 71 brls.                   |
| Hamburg,                                 | 1 ck.                                 |
| <b>Tallow—</b>                           |                                       |
| Melbourne,                               | 339 pks.                              |
| <b>Tartar—</b>                           |                                       |
| Oporto,                                  | 5 cks.                                |
| Messina,                                 | 8                                     |
| <b>Ultramarine—</b>                      |                                       |
| Rotterdam,                               | 10 cs. J. Rankine & Son               |

|                    |                                |
|--------------------|--------------------------------|
| <b>Yarnish—</b>    |                                |
| Antwerp,           | 1 ck.                          |
| <b>White Lead—</b> |                                |
| Rotterdam,         | 23 cks. 2 cs. J. Rankine & Son |
| <b>Wood Pulp—</b>  |                                |
| Christiania,       | 80 bls.                        |
| <b>Zinc Oxide—</b> |                                |
| Rotterdam,         | 50 cks. J. Rankine & Son       |
| <b>Zinc White—</b> |                                |
| Rotterdam,         | 45 cks. J. Rankine & Son       |

**TYNE.**

Week ending March 28th.

|                                          |                           |
|------------------------------------------|---------------------------|
| <b>Acids—</b>                            |                           |
| Antwerp,                                 | 4 jars Tyne S.            |
| <b>Barytes—</b>                          |                           |
| Antwerp,                                 | 400 bgs. Tyne S.          |
| <b>Chemicals (otherwise undescribed)</b> |                           |
| Antwerp,                                 | 1 cs. Tyne S.             |
| <b>Cod Oil—</b>                          |                           |
| Trondhjem,                               | 10 brls.                  |
| <b>Colours—</b>                          |                           |
| Antwerp,                                 | 1 brl. Tyne S.            |
| Hamburg,                                 | 2 cks. 1 cs. 8 p. Tyne S. |
| <b>Glue—</b>                             |                           |
| Antwerp,                                 | 3 cks. Tyne S.            |
| <b>Guano—</b>                            |                           |
| Hamburg,                                 | 210 bgs. Tyne S.          |
| <b>Limestone—</b>                        |                           |
| Antwerp,                                 | 6 cs. Tyne S.             |
| <b>Linseed Oil—</b>                      |                           |
| Rotterdam,                               | 12 brls.                  |
| <b>Phosphate—</b>                        |                           |
| Antwerp,                                 | 255 t. Lang Chem Manuf.   |
| <b>Pitch—</b>                            |                           |
| Antwerp,                                 | 1 ck.                     |
| <b>Salt—</b>                             |                           |
| Hamburg,                                 | 585 t.                    |
| <b>Soap—</b>                             |                           |
| Rotterdam,                               | 16 cs. Tyne S.            |
| <b>Starch—</b>                           |                           |
| Antwerp,                                 | 120 cs. Tyne S.           |
| <b>Tartaric Acid—</b>                    |                           |
| Rotterdam,                               | 1 ck. Tyne S.             |
| <b>White Lead—</b>                       |                           |
| Antwerp,                                 | 28 brls. 12 cks. S.       |
| <b>Wood Pulp—</b>                        |                           |
| Holmestrand,                             | 100 bls.                  |
| <b>Zinc Sulphate—</b>                    |                           |
| Gothenburg,                              | 21 cs.                    |

**GOOLE.**

Week ending March 25th.

|                                          |                 |
|------------------------------------------|-----------------|
| <b>Alizarine—</b>                        |                 |
| Rotterdam,                               | 93 brls. 1 cs.  |
| <b>Alkali—</b>                           |                 |
| Calais,                                  | 14 cks.         |
| <b>Alum—</b>                             |                 |
| Rotterdam,                               | 82 bgs.         |
| <b>Antimony—</b>                         |                 |
| Boulogne,                                | 10 cks.         |
| <b>Caoutchouc—</b>                       |                 |
| Boulogne,                                | 15 cks.         |
| <b>Colours—</b>                          |                 |
| Hamburg,                                 | 27 cks. 15 cs.  |
| Ghent,                                   | 12 2            |
| <b>Dyestuffs (otherwise undescribed)</b> |                 |
| Rotterdam,                               | 243 cks. 57 cs. |
| Boulogne,                                | 11 19 17        |
| Antwerp,                                 | 4               |
| <b>Extracts—</b>                         |                 |
| Hamburg,                                 | 19 cks. 30 cs.  |
| <b>Farina—</b>                           |                 |
| Hamburg,                                 | 420 bgs.        |
| Delfslybl,                               | 774             |
| <b>Glucose—</b>                          |                 |
| Hamburg,                                 | 40 cks.         |
| Calais,                                  | 100 bgs.        |
| <b>Glue—</b>                             |                 |
| Rouen,                                   | 20 bgs.         |
| <b>Lead Acetate—</b>                     |                 |
| Hamburg,                                 | 29 cks.         |
| <b>Logwood—</b>                          |                 |
| Jamaica,                                 | 511 t.          |
| <b>Pitch—</b>                            |                 |
| Rotterdam,                               | 40 cks.         |



|                                          |                                                     |                                                                                                                                                                                       |                                                                                                                                                           |                                                                                                                                                                             |
|------------------------------------------|-----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| P,<br>C,<br>re—<br>arg,<br>Salt—<br>arg, | 4 dms.<br>13 cks.<br>8<br>85 bgs.<br>320 cks. 50 t. | <b>GRIMSBY.</b><br><i>Week ending March 28th.</i><br><b>Rubber</b> —<br>Hamburg, 18 cs. 4 bgs.<br><b>Chemicals (otherwise undescribed)</b><br>Dieppe, 5 cks.<br>Hamburg, 3 cs. 3 pks. | Rotterdam, 20<br>Antwerp, 25<br><b>Colours</b> —<br>Antwerp, 43 cs. 2 cks.<br>Hamburg, 15 33 pks.<br><b>Dyes</b> —<br>Hamburg, 20 pks.<br>Antwerp, 35 cs. | <b>Starch</b> —<br>Antwerp, 20 cs.<br><b>Waste Salt</b> —<br>Hamburg, 500 bgs.<br><b>Wood Pulp</b> —<br>Malmo, 1,325 bls.<br><b>Zinc Ashes</b> —<br>Antwerp, 20 cs. 17 cks. |
|                                          |                                                     |                                                                                                                                                                                       |                                                                                                                                                           |                                                                                                                                                                             |
|                                          |                                                     |                                                                                                                                                                                       |                                                                                                                                                           |                                                                                                                                                                             |
|                                          |                                                     |                                                                                                                                                                                       |                                                                                                                                                           |                                                                                                                                                                             |

## EXPORTS OF CHEMICAL PRODUCTS

OF

## THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

| LONDON.                |  |  | Dyes (otherwise undescribed)—                                                                                             |  |  | Rio de Janeiro, 3 7 7                                                         |  |  | San Francisco, 51 3 3 420    |  |  |
|------------------------|--|--|---------------------------------------------------------------------------------------------------------------------------|--|--|-------------------------------------------------------------------------------|--|--|------------------------------|--|--|
| Week ending April 1st. |  |  | Boston, 10 pks. £272                                                                                                      |  |  | Sydney, 5 7 11                                                                |  |  | Carthage(Spn) 110 3 3 85     |  |  |
|                        |  |  | <b>Naphtha</b>                                                                                                            |  |  | Oporto, 4 16 9 <td colspan="3">Valencia, 414 8 3 3,846</td>                   |  |  | Valencia, 414 8 3 3,846      |  |  |
|                        |  |  | Treport, 16 cks. £60 <td colspan="3">Gibraltar, 15 31<td colspan="3">Nantes, 50 431</td></td>                             |  |  | Gibraltar, 15 31 <td colspan="3">Nantes, 50 431</td>                          |  |  | Nantes, 50 431               |  |  |
|                        |  |  | <b>Naphthaline</b> <td colspan="3">Pelotas, 1 14 41<td colspan="3">New York, 49 439</td></td>                             |  |  | Pelotas, 1 14 41 <td colspan="3">New York, 49 439</td>                        |  |  | New York, 49 439             |  |  |
| 40 cs. £74             |  |  | New York, 175 cks. £166 <td colspan="3"><b>Sheep Dip</b>—<td colspan="3">Palermo, 25 14 3 210</td></td>                   |  |  | <b>Sheep Dip</b> — <td colspan="3">Palermo, 25 14 3 210</td>                  |  |  | Palermo, 25 14 3 210         |  |  |
| 10 c. £21              |  |  | Marseilles, 99 pks. 74 <td colspan="3">E. London, 100 drs. £20<td colspan="3">Cullera, 38 15 340</td></td>                |  |  | E. London, 100 drs. £20 <td colspan="3">Cullera, 38 15 340</td>               |  |  | Cullera, 38 15 340           |  |  |
| 1 t. 8 30              |  |  | Hamburg, 12 20 bgs. 116 <td colspan="3">Novorossik, 100 cs. 250<td colspan="3">Las Palmas, 25 9 3 210</td></td>           |  |  | Novorossik, 100 cs. 250 <td colspan="3">Las Palmas, 25 9 3 210</td>           |  |  | Las Palmas, 25 9 3 210       |  |  |
| 2 72                   |  |  | Treport, 47 pks. 22 133 <td colspan="3">B. Ayres, 7 t. 9 c. 1,505 4,731<td colspan="3"><b>Bleaching Powder</b>—</td></td> |  |  | B. Ayres, 7 t. 9 c. 1,505 4,731 <td colspan="3"><b>Bleaching Powder</b>—</td> |  |  | <b>Bleaching Powder</b> —    |  |  |
| 1 9 4                  |  |  | Rotterdam, 24 52 <td colspan="3">Montreal, 100 200<td colspan="3">Baltimore, 70 cks.</td></td>                            |  |  | Montreal, 100 200 <td colspan="3">Baltimore, 70 cks.</td>                     |  |  | Baltimore, 70 cks.           |  |  |
| 1 3 4                  |  |  | Amsterdam, 40 35 <td colspan="3">Cape Town, 3 6 37 pks. 121<td colspan="3">Calcutta, 60 cs.</td></td>                     |  |  | Cape Town, 3 6 37 pks. 121 <td colspan="3">Calcutta, 60 cs.</td>              |  |  | Calcutta, 60 cs.             |  |  |
| <b>ium Sulphate</b> —  |  |  | <b>Pitch</b>                                                                                                              |  |  | Jamaica, 45 drs. 1 cs. 12 <td colspan="3">Colon, 66 brls.</td>                |  |  | Colon, 66 brls.              |  |  |
| 253 t. £2,000          |  |  | Dunkirk, 850 t. £1,403 <td colspan="3"><b>Soda Ash</b>—</td> <td colspan="3">Genoa, 113 20</td>                           |  |  | <b>Soda Ash</b> —                                                             |  |  | Genoa, 113 20                |  |  |
| 202 1,000              |  |  | Christiania, 50 frks. 11 <td colspan="3">Lytleton, 5 t. 15 c. £21</td> <td colspan="3">Havana, 32</td>                    |  |  | Lytleton, 5 t. 15 c. £21                                                      |  |  | Havana, 32                   |  |  |
| 23 200                 |  |  | Antwerp, 810 1,540 <td colspan="3"><b>Soda Crystals</b>—</td> <td colspan="3">Libau, 388 45 25 bxs.</td>                  |  |  | <b>Soda Crystals</b> —                                                        |  |  | Libau, 388 45 25 bxs.        |  |  |
| lique, 8 72            |  |  | Bourgas, 23 13 <td colspan="3">Newcastle, 32 t. 14 c. £71</td> <td colspan="3">Pasages, 15 25</td>                        |  |  | Newcastle, 32 t. 14 c. £71                                                    |  |  | Pasages, 15 25               |  |  |
| arg, 160 1,350         |  |  | San Juan, 1 479 2,890 <td colspan="3"><b>Sodium Bicarbonate</b>—</td> <td colspan="3">Philadelphia, 69 24 kgs</td>        |  |  | <b>Sodium Bicarbonate</b> —                                                   |  |  | Philadelphia, 69 24 kgs      |  |  |
| 100 850                |  |  | Bombay, 51 23 <td colspan="3">Algoa Bay, 1 t. 2 c. £9</td> <td colspan="3">Rio de Janeiro, 24 kgs</td>                    |  |  | Algoa Bay, 1 t. 2 c. £9                                                       |  |  | Rio de Janeiro, 24 kgs       |  |  |
| 100 170                |  |  | Melbourne, 3 cks. 25 35 <td colspan="3">Auckland, 6 17 48<td colspan="3">St. John, N.B., 10 70</td></td>                  |  |  | Auckland, 6 17 48 <td colspan="3">St. John, N.B., 10 70</td>                  |  |  | St. John, N.B., 10 70        |  |  |
| 137 19 c. 1,104        |  |  | Alexandria, 100 34 <td colspan="3"><b>Sodium Nitrate</b>—</td> <td colspan="3">San Francisco, 84</td>                     |  |  | <b>Sodium Nitrate</b> —                                                       |  |  | San Francisco, 84            |  |  |
|                        |  |  | Shanghai, 23 pks. 17 <td colspan="3">Alexandria, 70 bgs. £84</td> <td colspan="3">San Sebastian, 18</td>                  |  |  | Alexandria, 70 bgs. £84                                                       |  |  | San Sebastian, 18            |  |  |
|                        |  |  | Rouen, 100 t. 205 <td colspan="3"><b>Sodium Sulphate</b>—</td> <td colspan="3">Tampico, 15</td>                           |  |  | <b>Sodium Sulphate</b> —                                                      |  |  | Tampico, 15                  |  |  |
|                        |  |  | Boston, 180 cks 575 442 <td colspan="3">Bombay, 1 t. 5 c. £5<td colspan="3">Venice, 15</td></td>                          |  |  | Bombay, 1 t. 5 c. £5 <td colspan="3">Venice, 15</td>                          |  |  | Venice, 15                   |  |  |
|                        |  |  | <b>Tar</b>                                                                                                                |  |  | Dunedin, 5 t. 2 c. £36 <td colspan="3">Boston, 50 1 q. £375</td>              |  |  | Boston, 50 1 q. £375         |  |  |
|                        |  |  | Thursday Island, 60 drs. £111 <td colspan="3"><b>Sulphur</b>—</td> <td colspan="3"><b>Boracic Acid</b>—</td>              |  |  | <b>Sulphur</b> —                                                              |  |  | <b>Boracic Acid</b> —        |  |  |
|                        |  |  | Algoa Bay, 215 8 <td colspan="3">Fremantle, 2 t. 5 c. £20</td> <td colspan="3">Portland, M., 18 c. 1 q. £26</td>          |  |  | Fremantle, 2 t. 5 c. £20                                                      |  |  | Portland, M., 18 c. 1 q. £26 |  |  |
|                        |  |  | <b>Toluol</b>                                                                                                             |  |  | Lisbon, 250 brls. 174 <td colspan="3">Hamburg, 17 3 27</td>                   |  |  | Hamburg, 17 3 27             |  |  |
|                        |  |  | Rotterdam, 154 runs. £490 <td colspan="3"><b>Sulphuric Acid</b>—</td> <td colspan="3"><b>Borax</b>—</td>                  |  |  | <b>Sulphuric Acid</b> —                                                       |  |  | <b>Borax</b> —               |  |  |
|                        |  |  | <b>Coal Products (otherwise undes.)</b> —                                                                                 |  |  | Madras, 2 t. 15 c. £22                                                        |  |  | Stettin, 4 t. 19 c. 1 q. £99 |  |  |
|                        |  |  | Malta, 10 brls. £111 <td colspan="3">Mauritius, 10 t. £180</td> <td colspan="3">Portland, M., 1 1 20</td>                 |  |  | Mauritius, 10 t. £180                                                         |  |  | Portland, M., 1 1 20         |  |  |
|                        |  |  | <b>Copper Sulphate</b> —                                                                                                  |  |  | <b>Tartaric Acid</b> —                                                        |  |  | Hamburg, 31 8 1 628          |  |  |
|                        |  |  | Naples, 25 t. 1 c £475                                                                                                    |  |  | Fremantle, 5 c. £103                                                          |  |  | Genoa, 1 10 1 39             |  |  |
|                        |  |  | Leghorn, 12 10 228                                                                                                        |  |  | Wellington, 3 10                                                              |  |  | Rotterdam, 5 3 103           |  |  |
|                        |  |  | Odessa, 15 10 242                                                                                                         |  |  | Natal, 3 10                                                                   |  |  | Tampico, 12 11               |  |  |
|                        |  |  | Batoum, 5 178                                                                                                             |  |  | Lima, 10 58                                                                   |  |  | Boca, 6 6                    |  |  |
|                        |  |  | Venice, 11 17 180                                                                                                         |  |  | Boulogne, 5 35                                                                |  |  | Ibrail, 2 3 40               |  |  |
|                        |  |  | Genoa, 32 604                                                                                                             |  |  | <b>Waste Salt</b> —                                                           |  |  | Delagoa Bay, 2 7 2 7         |  |  |
|                        |  |  | <b>Cream of Tartar</b> —                                                                                                  |  |  | Barcelona, 20 t. 7 c. £178                                                    |  |  | Danzig, 10 19 1 220          |  |  |
|                        |  |  | Fremantle, 5 c. £30                                                                                                       |  |  |                                                                               |  |  | B. Ayres, 2 10 50            |  |  |
|                        |  |  | Lancaster, 2 10                                                                                                           |  |  |                                                                               |  |  | <b>Calcium</b> —             |  |  |
|                        |  |  | Perth, W.A., 10 53                                                                                                        |  |  |                                                                               |  |  | Sydney, 5 t. 16 c. £12       |  |  |
|                        |  |  | Sydney, 1 t. 105                                                                                                          |  |  |                                                                               |  |  | New York, 10 10 22           |  |  |
|                        |  |  | <b>Disinfectants</b> —                                                                                                    |  |  |                                                                               |  |  | <b>Calcium Chloride</b> —    |  |  |
|                        |  |  | Durban, 160 cks. £27                                                                                                      |  |  |                                                                               |  |  | Odessa, 10 t. 4 c. £23       |  |  |
|                        |  |  | Shanghai, 3 cs. 13                                                                                                        |  |  |                                                                               |  |  | Rangoon, 3 1 7               |  |  |
|                        |  |  | Melbourne, 2 20                                                                                                           |  |  |                                                                               |  |  | <b>Carbolic Acid</b> —       |  |  |
|                        |  |  | Sydney, 23 66                                                                                                             |  |  |                                                                               |  |  | Hamburg, 1 t. 16 c. £106     |  |  |
|                        |  |  | Otago, 27 22                                                                                                              |  |  |                                                                               |  |  | Philadelphia, 1 13 160       |  |  |
|                        |  |  | Bombay, 200 drs. 38                                                                                                       |  |  |                                                                               |  |  | <b>Caustic Potash</b> —      |  |  |
|                        |  |  | Natal, 30 16                                                                                                              |  |  |                                                                               |  |  | Chicago, 4 t. 13 c. £122     |  |  |
|                        |  |  | Capetown, 18 22                                                                                                           |  |  |                                                                               |  |  | Cadiz, 2 4                   |  |  |
|                        |  |  | <b>Guano</b> —                                                                                                            |  |  |                                                                               |  |  | <b>Caustic Soda</b> —        |  |  |
|                        |  |  | Guadeloupe, 540 t. £5,400                                                                                                 |  |  |                                                                               |  |  | Alexandria, 11 dms.          |  |  |
|                        |  |  | St. Michael's, 1 15 c. 20                                                                                                 |  |  |                                                                               |  |  | Amsterdam, 12                |  |  |
|                        |  |  | <b>Manure</b> —                                                                                                           |  |  |                                                                               |  |  | Bahia, 30                    |  |  |
|                        |  |  | Jersey, 20 t. £120                                                                                                        |  |  |                                                                               |  |  | Baltimore, 65                |  |  |
|                        |  |  | Trinidad, 223 6,521                                                                                                       |  |  |                                                                               |  |  | Barcelona, 150 100 br        |  |  |
|                        |  |  | Bordeaux, 15 150                                                                                                          |  |  |                                                                               |  |  | Bombay, 23                   |  |  |
|                        |  |  | Dunkirk, 25 14 c. 40                                                                                                      |  |  |                                                                               |  |  | Bordeaux, 17                 |  |  |
|                        |  |  | Rotterdam, 4 19 20                                                                                                        |  |  |                                                                               |  |  | Brisbane, 30                 |  |  |
|                        |  |  | St. Lucia, 120 1,320                                                                                                      |  |  |                                                                               |  |  | Fiume, 15                    |  |  |
|                        |  |  | Rouen, 58 4 175                                                                                                           |  |  |                                                                               |  |  | Genoa, 263                   |  |  |
|                        |  |  | Berbice, 20 175                                                                                                           |  |  |                                                                               |  |  | Gd. Canary, 2                |  |  |
|                        |  |  | <b>Nitrogen Protoxide</b> —                                                                                               |  |  |                                                                               |  |  | Hamburg, 34                  |  |  |
|                        |  |  | Wellington, 1 cs. £57                                                                                                     |  |  |                                                                               |  |  | Havre, 20                    |  |  |
|                        |  |  | <b>Phosphate</b> —                                                                                                        |  |  |                                                                               |  |  | Hiogo, 152                   |  |  |
|                        |  |  | Limon, 50 t. £437                                                                                                         |  |  |                                                                               |  |  | Leghorn, 34                  |  |  |
|                        |  |  | <b>Phosphorus</b> —                                                                                                       |  |  |                                                                               |  |  | Lisbon, 100                  |  |  |
|                        |  |  | Dunedin, 10 cs. £102                                                                                                      |  |  |                                                                               |  |  | Malaga, 113                  |  |  |
|                        |  |  | Alexandria, 12 122                                                                                                        |  |  |                                                                               |  |  | Messina, 20                  |  |  |
|                        |  |  | <b>Potash</b> —                                                                                                           |  |  |                                                                               |  |  | M. Video, 50                 |  |  |
|                        |  |  | Melbourne, 19 c. £47                                                                                                      |  |  |                                                                               |  |  | Montreal, 10                 |  |  |
|                        |  |  | Wellington, 19 46                                                                                                         |  |  |                                                                               |  |  | Naples, 43                   |  |  |
|                        |  |  | <b>Potassium Chlorate</b> —                                                                                               |  |  |                                                                               |  |  | New Fairwater, 30            |  |  |
|                        |  |  | New York, 1 t. 5 c. £53                                                                                                   |  |  |                                                                               |  |  | N. Orleans, 50               |  |  |
|                        |  |  | <b>Potassium Chloride</b> —                                                                                               |  |  |                                                                               |  |  | New York, 200 50 45 bxs.     |  |  |
|                        |  |  | Colombo, 20 t. 2 c. £190                                                                                                  |  |  |                                                                               |  |  | Odessa, 275                  |  |  |
|                        |  |  | <b>Saltpetre</b> —                                                                                                        |  |  |                                                                               |  |  | Palermo, 10                  |  |  |
|                        |  |  | Limon, 2 t. 1 c. £47                                                                                                      |  |  |                                                                               |  |  | Philadelphia, 855            |  |  |
|                        |  |  | Bahia, 2 13 67                                                                                                            |  |  |                                                                               |  |  | Porto Alegre, 84             |  |  |
|                        |  |  | Santos, 5 5 124                                                                                                           |  |  |                                                                               |  |  | Rio Grande Do Sul, 100       |  |  |

## LIVERPOOL.

Week ending April 1st.

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                              |                              |                              |                              |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| Alkali Waste—<br>Copenhagen, 2 t. 8 c. 2 q. £7<br><b>Alum</b> —<br>Ibrail, 5 t. 10 c. £28<br>Piraeus, 1 10 7<br>St. John, N.B., 15 11 3 q. 75<br>Galatz, 9 4 42<br>Seville, 11 6<br>Melbourne, 1 5<br><b>Aluminous Cake</b> —<br>Calcutta, 40 t. 1 c. £109<br><b>Ammonia</b> —<br>Santander, 10 t. 3 c. £33<br>Lagos, 5 cs. 44<br><b>Ammonium Carbonate</b> —<br>Odessa, 10 t. 15 c. £373<br>Lisbon, 10 18<br>Rotterdam, 5 9<br>Paris, 1 42<br>Marseilles, 15 25<br>Philadelphia, 4 9 3 q. 156<br><b>Ammonium Chloride</b> —<br>Odessa, 1 t. £37<br>Toronto, 6 c. 11<br>Lisbon, 9 18<br>Galatz, 4 8<br>Valparaiso, 2 14 1 q. 73<br>Barcelona, 1 15 40<br>Santos, 17 2 30<br>Alexandretta, 10 brls. 46<br>Naples, 9 14<br>Rio de Janeiro, 14 23<br>Kutendjie, 6 10<br><b>Ammonium Sulphate</b> —<br>Barbadoes, 6 t. 3 q. £57<br>St. John, N.S., 5 17 c. 3 43 | St. John, N.S., 5 17 c. 3 43 | St. John, N.S., 5 17 c. 3 43 | St. John, N.S., 5 17 c. 3 43 | St. John, N.S., 5 17 c. 3 43 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                              |                              |                              |                              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                              |                              |                              |                              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                              |                              |                              |                              |



|                                          |                   |                  |    |
|------------------------------------------|-------------------|------------------|----|
| Rotterdam,                               | 9                 | 31 cks.          |    |
| San Francisco,                           | 245               | 50               |    |
| San Sebastian,                           | 30                |                  |    |
| Santa Catharina,                         | 40                |                  |    |
| Santos,                                  | 50                |                  |    |
| Seville,                                 | 435               |                  |    |
| Sydney,                                  | 30                |                  |    |
| Tampico,                                 | 9                 |                  |    |
| Valparaiso,                              | 50                |                  |    |
| Varna,                                   | 10                |                  |    |
| <b>China Clay—</b>                       |                   |                  |    |
| Boston,                                  | 676 t.            |                  |    |
| New York,                                | 25                |                  |    |
| <b>Citric Acid—</b>                      |                   |                  |    |
| Santos,                                  | 6 c.              | £39              |    |
| <b>Coal Products—</b>                    |                   |                  |    |
| <b>Aniline Colours</b>                   |                   |                  |    |
| St. John, N.B.,                          | 3 kgs.            |                  |    |
| <b>Creosote Oil</b>                      |                   |                  |    |
| Lisbon,                                  | 210 brls.         |                  |    |
| <b>Naphtha</b>                           |                   |                  |    |
| Calcutta,                                | 20 dms.           |                  |    |
| <b>Naphthaline</b>                       |                   |                  |    |
| Hamburg,                                 | 420 bgs.          |                  |    |
| <b>Pitch</b>                             |                   |                  |    |
| Ibrail,                                  | 200 brls.         |                  |    |
| <b>Tar</b>                               |                   |                  |    |
| Ambriz,                                  | 4 cks.            |                  |    |
| Kinsemo,                                 | 10                |                  |    |
| St. John, N.B.,                          | 25                | 40 tcs. 30 brls. |    |
| <b>Tar Oil</b>                           |                   |                  |    |
| Seville,                                 | 2 brls.           |                  |    |
| <b>Coal Products (otherwise undes.)—</b> |                   |                  |    |
| New York,                                | 15 brls. 128 cks. |                  |    |
| <b>Copper Sulphate—</b>                  |                   |                  |    |
| Rio de Janeiro,                          | 3 t. 18 c.        | £60              |    |
| S. Paulo,                                | 6                 | 10               |    |
| Havre,                                   | 19                | 16               |    |
| Barcelona,                               | 15                | 249              |    |
| Seville,                                 | 1                 | 31               |    |
| Cabello,                                 | 5                 | 5                |    |
| Nantes,                                  | 263               | 11 3 q. 4, 187   |    |
| Palermo,                                 | 5                 | 16               | 90 |
| Bordeaux,                                | 189               | 9 2 2, 898       |    |
| Leghorn,                                 | 30                | 4 6 484          |    |
| Lisbon,                                  | 35                | 1 3 587          |    |
| Oporto,                                  | 48                | 19 798           |    |
| Sydney,                                  | 5                 | 75               |    |
| Naples,                                  | 34                | 19 3 532         |    |
| Paris,                                   | 43                | 2 3 679          |    |
| Cette,                                   | 609               | 0 3 10,929       |    |
| Genoa,                                   | 76                | 3 1 1,202        |    |
| <b>Copperas—</b>                         |                   |                  |    |
| Callao,                                  | 4 t. 3 c. 2 q.    | £7               |    |
| Calcutta,                                | 26                | 46               |    |
| Kurrachee,                               | 12                | 4 2 21           |    |
| San Francisco,                           | 27                | 50               |    |
| M. Video,                                | 13                | 21               |    |
| <b>Cream of Tartar—</b>                  |                   |                  |    |
| Santos,                                  | 9 c. 3 q.         | £50              |    |
| <b>Disinfectants—</b>                    |                   |                  |    |
| Bombay,                                  | 15 c. 1 q.        | £76              |    |
| Rangoon,                                 | 5                 | 9                |    |
| <b>Gelatine—</b>                         |                   |                  |    |
| Boston,                                  | 75 bxs.           |                  |    |
| New York,                                | 80                |                  |    |
| <b>Gypsum—</b>                           |                   |                  |    |
| New York,                                | 36 t. 11 c.       | £117             |    |
| <b>Indigo—</b>                           |                   |                  |    |
| Philadelphia,                            | 14 c.             | £12              |    |
| <b>Iron Oxide—</b>                       |                   |                  |    |
| Philadelphia,                            | 5 t. 14 c.        | £150             |    |
| Gijon,                                   | 3                 | 11 20            |    |
| <b>Lime—</b>                             |                   |                  |    |
| G. Popo,                                 | 5 t.              | £14              |    |
| <b>Magnesia—</b>                         |                   |                  |    |
| Santander,                               | 1 t. 5 c.         | £25              |    |
| <b>Magnesium Chlorate—</b>               |                   |                  |    |
| Paris,                                   | 9 t. 19 c.        | £25              |    |
| <b>Magnesium Chloride—</b>               |                   |                  |    |
| Bombay,                                  | 12 t. 16 c.       | £31              |    |
| <b>Magnesium Sulphate—</b>               |                   |                  |    |
| Lisbon,                                  | 8 cks.            |                  |    |
| Rio de Janeiro,                          | 100 kgs.          |                  |    |
| <b>Manure—</b>                           |                   |                  |    |
| Venice,                                  | 10 t. 2 c. 3 q.   | £85              |    |
| Havre,                                   | 50                | 1 143            |    |
| St. Malo,                                | 345               | 1 6 1,396        |    |
| Madeira,                                 | 5                 | 48               |    |
| Trinidad,                                | 275               | 482              |    |
| St. John, N.B.,                          | 5                 | 22               |    |
| Antwerp,                                 | 21                | 7 8 99           |    |
| Gd. Canary,                              | 20                | 70               |    |
| <b>Oxalic Acid—</b>                      |                   |                  |    |
| Barcelona,                               | 5 t. 5 c.         | £180             |    |
| Newfairwater,                            | 2                 | 5 3 q. 60        |    |
| <b>Paint—</b>                            |                   |                  |    |
| Acapulca,                                | 34 cks.           |                  |    |
| Amayala,                                 | 2                 |                  |    |
| Beyroul,                                 | 40 kgs.           |                  |    |
| Bilbao,                                  | 3 bns.            |                  |    |
| Calcutta,                                | 560               |                  |    |

|                              |                  |                 |  |
|------------------------------|------------------|-----------------|--|
| Callao,                      | 120 kgs.         |                 |  |
| Cape Town,                   | 1                |                 |  |
| Cienfuegos,                  | 2 cks.           |                 |  |
| Egwanga,                     | 26               |                 |  |
| Elmina,                      | 87               |                 |  |
| Mayaguez,                    | 100              |                 |  |
| Penang,                      | 4                |                 |  |
| Puerto Plata,                | 5                |                 |  |
| Rio de Janeiro,              | 20               |                 |  |
| San Juan,                    | 5                |                 |  |
| <b>Painters' Colours—</b>    |                  |                 |  |
| Accra,                       | 115 pks.         |                 |  |
| B. Ayres,                    | 45 cks. 150 cs.  |                 |  |
| Ceara,                       | 2 26 kgs 4 brls. |                 |  |
| Constantinople,              | 2                |                 |  |
| Corfu,                       | 4                |                 |  |
| Lagos,                       | 2 dms.           | 218 pks.        |  |
| Lisbon,                      | 1 cs.            |                 |  |
| Pernambuco,                  | 80               |                 |  |
| Portland, M.,                | 1                |                 |  |
| St. John, N.B.,              | 7                |                 |  |
| Singapore,                   | 1                |                 |  |
| Valparaiso,                  | 10               |                 |  |
| Vera Cruz,                   | 7 brls.          |                 |  |
| <b>Phosphorus—</b>           |                  |                 |  |
| Shanghai,                    | 1 t. 3 c.        | £233            |  |
| Hio,                         | 15               | 190             |  |
| M. Video,                    | 4                | 1 q. 30         |  |
| Tampico,                     | 5                | 53              |  |
| Kingston (Jam.),             | 1                | 13              |  |
| Vera Cruz,                   | 6                | 67              |  |
| Rio de Janeiro,              | 2                | 28              |  |
| Pernambuco,                  | 6                | 83              |  |
| Hamburg,                     | 2                | 28              |  |
| <b>Piric Acid—</b>           |                  |                 |  |
| Philadelphia,                | 5 c.             | £20             |  |
| <b>Potash—</b>               |                  |                 |  |
| Philadelphia,                | 13 t. 11 c.      | £432            |  |
| <b>Potassium Bichromate—</b> |                  |                 |  |
| Pernambuco,                  | 4 c. 3 q.        | £44             |  |
| Copenhagen,                  | 8                | 15              |  |
| Vera Cruz,                   | 1 t. 15          | 85              |  |
| Piraeus,                     | 9                | 0 1 360         |  |
| <b>Potassium Bromide—</b>    |                  |                 |  |
| Vera Cruz,                   | 2 q.             | £7              |  |
| <b>Potassium Carbonate—</b>  |                  |                 |  |
| Valparaiso,                  | 1 t. 5 c.        | £26             |  |
| <b>Potassium Chlorate—</b>   |                  |                 |  |
| Sao Paulo,                   | 3 t.             | £118            |  |
| Leghorn,                     | 10 c.            | 24              |  |
| Copenhagen,                  | 7                | 10 313          |  |
| Kingston,                    | 1                | 47              |  |
| Rotterdam,                   | 6                | 12              |  |
| Antwerp,                     | 4                | 167             |  |
| Pernambuco,                  | 2                | 10 105          |  |
| Singapore,                   | 16               | 5 9             |  |
| Shanghai,                    | 53               | 15 630          |  |
| New York,                    | 6                | 5 1,957         |  |
| Boston,                      | 6                | 5 238           |  |
| Vera Cruz,                   | 1                | 7 54            |  |
| Hamburg,                     | 3                | 3 130           |  |
| Cape Town,                   | 1                | 39              |  |
| Philadelphia,                | 3                | 190             |  |
| Tampico,                     | 3                | 15 140          |  |
| <b>Potassium Prussiate—</b>  |                  |                 |  |
| Genoa,                       | 1 t. 6 c.        | £63             |  |
| <b>Potassium Sulphate—</b>   |                  |                 |  |
| Reunion,                     | 11 c.            | £4              |  |
| <b>Salt—</b>                 |                  |                 |  |
| Accra,                       | 6 t. 5 c.        |                 |  |
| Algoa Bay,                   | 5                |                 |  |
| Benty,                       | 200              |                 |  |
| Brisbane,                    | 10               |                 |  |
| Calcutta,                    | 636              |                 |  |
| Callao,                      | 2                | 10              |  |
| Cameroons,                   | 39               | 17              |  |
| Lagos,                       | 40               |                 |  |
| Pansboro',                   | 100              |                 |  |
| Rio de Janeiro,              | 4                | 16              |  |
| St. John, N.B.,              | 200              |                 |  |
| Trinidad,                    | 17               | 16              |  |
| Ukaka,                       | 25               |                 |  |
| <b>Salt Cake—</b>            |                  |                 |  |
| Boston,                      | 30 t.            | £53             |  |
| <b>Saltpetre—</b>            |                  |                 |  |
| Cabello,                     | 2 t. 5 c. 3 q.   | £53             |  |
| Vera Cruz,                   | 1 15 3           | 40              |  |
| Ceara,                       | 4                |                 |  |
| <b>Sheep Dip—</b>            |                  |                 |  |
| B. Ayres,                    | 8 t. 18 c. 2 q.  | £250            |  |
| <b>Slag—</b>                 |                  |                 |  |
| Santos,                      | 25 t. 2 c.       | £56             |  |
| St. John, N.B.,              | 5                | 10              |  |
| <b>Soap—</b>                 |                  |                 |  |
| Adelaide,                    | 50 bxs.          |                 |  |
| Alexandria,                  | 54               |                 |  |
| Algoa Bay,                   | 290              | 5 bls.          |  |
| Baltimore,                   | 30               |                 |  |
| Barcelona,                   | 130              |                 |  |
| Bombay,                      | 219              | 19 cs. 250 bds. |  |
| Boston,                      | 1 ck.            | 1               |  |
| Calcutta,                    | 500              |                 |  |

|                             |           |                    |  |
|-----------------------------|-----------|--------------------|--|
| Cape Coast,                 | 321       | 2 cs.              |  |
| Cape Town,                  | 420       |                    |  |
| Colon,                      | 1         |                    |  |
| Constantinople,             | 2         |                    |  |
| Drewin,                     | 112       |                    |  |
| Durban,                     | 270       |                    |  |
| Genoa,                      | 100       |                    |  |
| Gibraltar,                  | 100       |                    |  |
| Gothenburg,                 | 300       |                    |  |
| Gd. Bassa,                  | 20        |                    |  |
| Havre,                      | 500       | 790                |  |
| Hong Kong,                  | 200       |                    |  |
| Iquitos,                    | 300       |                    |  |
| Kingston, Ja.,              | 1,450     |                    |  |
| Kurrachee,                  | 61        |                    |  |
| Manaos,                     | 75        |                    |  |
| Monrovia,                   | 124       |                    |  |
| N. Orleans,                 | 160       |                    |  |
| New York,                   | 386       | 37                 |  |
| Para,                       | 500       |                    |  |
| Portland, Me.,              | 3         |                    |  |
| Pt. Natal,                  | 5         | 40 kgs.            |  |
| Rangoon,                    | 1,002     | 5                  |  |
| St. John's, N.B.,           | 24        |                    |  |
| Shanghai,                   | 1,000     |                    |  |
| Singapore,                  | 25        |                    |  |
| Trinidad,                   | 500       |                    |  |
| Vera Cruz,                  | 1         |                    |  |
| <b>Soda Alkali—</b>         |           |                    |  |
| Barcelona,                  | 70 brls.  |                    |  |
| Buffalo,                    | 40        |                    |  |
| Genoa,                      | 68        |                    |  |
| Havre,                      | 28        |                    |  |
| Leghorn,                    | 100       |                    |  |
| Odessa,                     | 300       |                    |  |
| Sydney,                     | 40        |                    |  |
| Yokohama,                   | 22        |                    |  |
| <b>Soda Ash—</b>            |           |                    |  |
| Antwerp,                    | 550 bgs.  |                    |  |
| Bahia,                      | 10 brls.  |                    |  |
| Baltimore,                  | 2,896     | 30 cks. 366 tcs.   |  |
| 200 dms.                    |           |                    |  |
| Barcelona,                  | 66        |                    |  |
| Gothenburg,                 | 110       |                    |  |
| Lisbon,                     | 20        |                    |  |
| M. Video,                   | 5,752     | 200 brls. 152 tcs. |  |
| Passages,                   | 10        |                    |  |
| Philadelphia,               | 3,270     | 142 581            |  |
| Porto Alegre,               | 10        |                    |  |
| Rio Grande do Sul,          | 40        |                    |  |
| Rotterdam,                  | 200 bgs.  |                    |  |
| San Francisco,              | 93        |                    |  |
| Smyrna,                     | 100       |                    |  |
| Syria,                      | 25 t.     | 50 brls. £84       |  |
| Boston,                     | 25 t.     |                    |  |
| <b>Soda Crystals—</b>       |           |                    |  |
| Montreal,                   | 85 kgs.   |                    |  |
| Pt. Natal,                  | 20        |                    |  |
| St. John, N.B.,             | 20        | 10 brls.           |  |
| " N.B.,                     | 40        |                    |  |
| Shanghai,                   | 10 bgs.   |                    |  |
| <b>Sodium Bicarbonate—</b>  |           |                    |  |
| Barcelona,                  | 75 kgs.   | 25 brls. 70        |  |
| Bilbao,                     | 115       | 6 cks.             |  |
| Genoa,                      | 100       |                    |  |
| Ghent,                      | 100       |                    |  |
| Gd. Canary,                 | 7         |                    |  |
| Halifax,                    | 200       |                    |  |
| Hamburg,                    | 55        | 4 2                |  |
| Hio,                        | 500       |                    |  |
| Libau,                      | 230       |                    |  |
| Marseilles,                 | 135       |                    |  |
| Montego Bay,                | 40        |                    |  |
| Montreal,                   | 150       | 25 60 bgs.         |  |
| Nagasaki,                   | 200       |                    |  |
| Odessa,                     | 605       |                    |  |
| Piraeus,                    | 20        |                    |  |
| Rangoon,                    | 4         |                    |  |
| St. John, N.B.,             | 75        |                    |  |
| Sydney,                     | 320       |                    |  |
| Syria,                      | 20        | 3 brls.            |  |
| Valencia,                   | 10        |                    |  |
| Amsterdam,                  | 40        |                    |  |
| B. Ayres,                   | 25        |                    |  |
| Copenhagen,                 | 25        |                    |  |
| <b>Sodium Bichromate—</b>   |           |                    |  |
| Genoa,                      | 3 cks.    |                    |  |
| Ghent,                      | 16        |                    |  |
| <b>Sodium Carbonate—</b>    |           |                    |  |
| New York,                   | 56 brls.  |                    |  |
| <b>Sodium Hyposulphite—</b> |           |                    |  |
| Callao,                     | 30 kgs.   |                    |  |
| <b>Sodium Sulphate—</b>     |           |                    |  |
| Lisbon,                     | 2 t. 6 c. | £5                 |  |
| Rio de Janeiro,             | 1 14      | 1 q. 0             |  |
| Boston,                     | 350 bgs.  |                    |  |
| <b>Starch—</b>              |           |                    |  |
| St. John's, N.B.,           | 4 cs.     |                    |  |
| <b>Sulphur—</b>             |           |                    |  |
| Progresso,                  | 4 c.      | £1                 |  |
| Santos,                     | 1 t. 2    | 6                  |  |
| Lisbon,                     | 3 13      | 3 q. 24            |  |
| Boston,                     | 250       | 1 812              |  |

|                         |            |            |  |
|-------------------------|------------|------------|--|
| Calcutta,               | 6 t.       |            |  |
| Constantinople,         | 25         | 1          |  |
| <b>Superphosphates—</b> |            |            |  |
| Teneriffe,              | 10 t.      |            |  |
| Reunion,                | 4          | 18 c. 1 q. |  |
| Cullera,                | 29         | 10 2       |  |
| Valencia,               | 40         |            |  |
| Las Palmas,             | 13         |            |  |
| <b>Tartaric Acid—</b>   |            |            |  |
| Santos,                 | 11 c. 3 q. |            |  |
| <b>Tin Chlorate—</b>    |            |            |  |
| Cadiz,                  | 1 c.       |            |  |
| <b>Varnish—</b>         |            |            |  |
| Lisbon,                 | 1 ck.      |            |  |
| Naples,                 | 3 cs.      |            |  |
| Rotterdam,              | 5          |            |  |
| <b>White Lead—</b>      |            |            |  |
| Bahia,                  | 3 t. 1 c.  |            |  |
| <b>Zinc Chlorate—</b>   |            |            |  |
| Valparaiso,             | 1 t. 2 c.  |            |  |
| <b>Zinc Chloride—</b>   |            |            |  |
| Bombay,                 | 2 t. 10 c. |            |  |
| Boston,                 | 1 10       |            |  |

## MANCHESTER

Week ending April 1st.

|                                      |            |  |  |
|--------------------------------------|------------|--|--|
| <b>Ammonium Carbonate—</b>           |            |  |  |
| Copenhagen,                          | 10 kgs.    |  |  |
| Hamburg,                             | 5 cks.     |  |  |
| <b>Ammonium Sulphate—</b>            |            |  |  |
| Ghent,                               | 240 bgs.   |  |  |
| <b>Aniline Colours—</b>              |            |  |  |
| Bombay,                              | 3 cs.      |  |  |
| Hamburg,                             | 1          |  |  |
| Rotterdam,                           | 9 cks.     |  |  |
| <b>Aniline Salt—</b>                 |            |  |  |
| Hamburg,                             | 10 cks.    |  |  |
| <b>Carbolic Acid—</b>                |            |  |  |
| Treport,                             | 9 cks.     |  |  |
| <b>China Clay—</b>                   |            |  |  |
| Copenhagen,                          | 5 bgs.     |  |  |
| <b>Creosote Salts—</b>               |            |  |  |
| Treport,                             | 60 cks.    |  |  |
| <b>Dyestuffs (otherwise undes.)—</b> |            |  |  |
| Copenhagen,                          | 6 kgs.     |  |  |
| <b>Mineral White—</b>                |            |  |  |
| Antwerp,                             | 102 c.     |  |  |
| <b>Oxygen—</b>                       |            |  |  |
| Treport,                             | 36 clydrs. |  |  |
| <b>Pitch—</b>                        |            |  |  |
| Cette,                               | 118 t.     |  |  |
| <b>Rosin—</b>                        |            |  |  |
| Copenhagen,                          | 6 brls.    |  |  |
| <b>Salt—</b>                         |            |  |  |
| Rotterdam,                           | 200 t.     |  |  |
| <b>Sodium Bicarbonate—</b>           |            |  |  |
| Treport,                             | 70 kgs.    |  |  |
| <b>Tar Oil—</b>                      |            |  |  |
| Rotterdam,                           | 34 dms.    |  |  |
| Treport,                             | 31 cks.    |  |  |
| <b>Tar Salts—</b>                    |            |  |  |
| Rotterdam,                           | 30 cks.    |  |  |
| <b>Toluol—</b>                       |            |  |  |
| Rotterdam,                           | 50 cks.    |  |  |
| <b>Zinc Chloride—</b>                |            |  |  |
| Bombay,                              | 8 cks.     |  |  |

## HULL.

Week ending March 28th

|                                             |               |   |         |
|---------------------------------------------|---------------|---|---------|
| <b>Alkali—</b>                              |               |   |         |
| Genoa,                                      | 1 ck.         |   |         |
| Leghorn,                                    | 14            |   |         |
| Naples,                                     | 3             |   |         |
| <b>Ammonium Sulphate—</b>                   |               |   |         |
| Dunkirk,                                    | 100 bgs.      |   |         |
| Ghent,                                      | 702           |   |         |
| <b>Benzol—</b>                              |               |   |         |
| Amsterdam,                                  | 32 cks.       |   |         |
| <b>Bleaching Powder—</b>                    |               |   |         |
| New York,                                   | 31 cks.       |   |         |
| Stettin,                                    | 155           |   |         |
| <b>Caustic Soda—</b>                        |               |   |         |
| Amsterdam,                                  | 6 cks.        |   |         |
| Hango,                                      | 9             |   |         |
| <b>Chemicals</b> <i>(otherwise underse-</i> |               |   |         |
| Amsterdam,                                  |               |   | 12 pbs. |
| Antwerp,                                    | 4 cks. 20 cs. |   |         |
| Alexandria,                                 | 100           |   |         |
| Copenhagen,                                 |               | 5 |         |
| Cristiania,                                 | 676 lbs.      |   | 48      |
| Drontheim,                                  | 320           |   |         |
| Dunkirk,                                    |               | 1 |         |



|                              |               |
|------------------------------|---------------|
| 18 cks.                      |               |
| 4                            | 17 10         |
| 42                           | 23 1          |
| 10                           |               |
| 1                            |               |
| 2                            |               |
| 71                           | 25            |
| 52                           |               |
| 24                           | 12            |
| 8                            | 23 154        |
| 4                            | 10            |
| Seed Oil—                    |               |
| rdam, 1,675 c.               |               |
| rp, 611                      |               |
| adria, 21                    |               |
| iansand, 53                  |               |
| 82                           |               |
| burg, 118                    |               |
| urg, 865                     |               |
| berg, 300                    |               |
| rn, 100                      |               |
| illes, 1,560                 |               |
| dam, 1,406                   |               |
| 3                            |               |
| 301                          |               |
| te—                          |               |
| urg, 60 brls.                |               |
| iffs (otherwise undescribed) |               |
| rdam, 12 cks.                |               |
| rp, 1                        | 1 ble.        |
| ania, 1                      |               |
| rk, 1                        |               |
| 20 bgs.                      |               |
| Oil—                         |               |
| rdam, 52 c.                  |               |
| rp, 100                      |               |
| iansund, 35                  |               |
| ania, 549                    |               |
| iansand, 51                  |               |
| heim, 53                     |               |
| rk, 7                        |               |
| urg, 204                     |               |
| dam, 199                     |               |
| 146                          |               |
| 35                           |               |
| e—                           |               |
| urg, 500 sks.                |               |
| d White—                     |               |
| 50 bgs.                      |               |
| heim, 1 ck                   |               |
| 240 kgs.                     |               |
| rs' Colours—                 |               |
| rdam, 14 cks.                |               |
| rp, 56                       | 2 cs. 17 pks. |
| adria, 1 dmi. 1              | 592           |
| nd, 15                       |               |
| 1                            | 2             |
| iansund, 1                   |               |
| burg, 6                      | 4 25          |
| ania, 2                      |               |
| iansand, 1                   | 40            |
| heim, 7                      | 172 dms.      |
| rk, 2                        | 4 pks.        |
| 36                           |               |
| burg, 4                      | 1 1           |
| urg, 52                      | 2 2           |
| 6 dms.                       |               |
| gen, 2                       |               |
| rn, 12                       |               |
| 3                            |               |
| ork, 105                     | 145           |
| 145                          |               |
| dam, 4                       | 1             |
| ger, 2                       |               |
| 69                           |               |
| 9 dms. 5                     | 66            |
| n Wax—                       |               |
| illes, 2 cs.                 |               |
| rp, 263 t.                   |               |
| rk, 200                      |               |
| rn, 310                      |               |
| 100 cks.                     |               |
| agen, 80 cs.                 |               |
| burg, 8 sks.                 |               |
| phosphate—                   |               |
| 450 t.                       |               |
| rdam, 14 cks.                |               |
| ania, 2                      |               |
| burg, 10                     |               |
| rdam, 16 cks.                |               |
| rp, 25                       |               |
| agen, 3                      |               |
| urg, 7                       |               |
| 25                           |               |
| dam, 10                      |               |

|                               |  |
|-------------------------------|--|
| <b>Treacle—</b>               |  |
| Drontheim, 25 cks.            |  |
| <b>Turpentine—</b>            |  |
| Alexandria, 5 cks.            |  |
| <b>Varnish—</b>               |  |
| Antwerp, 5 cks. 3 cs. 14 dms. |  |
| Amsterdam, 2                  |  |
| Bremen, 1                     |  |
| Drontheim, 3                  |  |
| Genoa, 3                      |  |
| Hamburg, 7                    |  |
| Marseilles, 4                 |  |
| Stettin, 5                    |  |
| <b>Whiting—</b>               |  |
| Amsterdam, 1 ck.              |  |

# GLASGOW.

Week ending April and.

|                                          |  |
|------------------------------------------|--|
| <b>Albumen—</b>                          |  |
| New York, £72                            |  |
| <b>Alkali—</b>                           |  |
| Iloilo, 5 t. 19 c.                       |  |
| <b>Ammonium Sulphate—</b>                |  |
| Demerara, 28 t. 4½ c.                    |  |
| Genoa, 52 ¾                              |  |
| Venice, 8 14½                            |  |
| Hamburg, 50 11                           |  |
| Amsterdam, 50                            |  |
| Barcelona, 51 17½                        |  |
| Callera, 111 19½                         |  |
| Nickerie, 28 17½                         |  |
| Valencia, 666 ¾                          |  |
| <b>Boracic Acid—</b>                     |  |
| Yokohama, £38                            |  |
| <b>Borax—</b>                            |  |
| Yokohama, £31                            |  |
| <b>Carbolic Acid—</b>                    |  |
| Germany, 10 t.                           |  |
| <b>Castor Oil—</b>                       |  |
| Santos, £30                              |  |
| Sydney, 55                               |  |
| <b>Chemicals (otherwise undescribed)</b> |  |
| Germany, £120                            |  |
| <b>Coal Products—</b>                    |  |
| Aniline Colours                          |  |
| U.S.A., £72                              |  |
| <b>Naphtha</b>                           |  |
| Tronville, 41 t. 11 c.                   |  |
| <b>Pitch</b>                             |  |
| Genoa, £634                              |  |
| Penang, 22                               |  |
| Venice, 990                              |  |
| Bordeaux, 101                            |  |
| Konigsberg, 600                          |  |
| Tronville, 244                           |  |
| Gothenburg, 268                          |  |
| U.S.A., £161                             |  |
| <b>Tar</b>                               |  |
| Penang, 24 t. 4 c.                       |  |
| Singapore, 89                            |  |
| U.S.A., 23                               |  |
| Konigsberg, 442 brls.                    |  |
| <b>Coal Products (otherwise undes.)—</b> |  |
| Rotterdam, £160                          |  |
| <b>Cottonseed Oil—</b>                   |  |
| Manila, £24                              |  |
| The Philippines, 24                      |  |
| <b>Extracts—</b>                         |  |
| Barcelona, £116                          |  |
| <b>Gelatine—</b>                         |  |
| U.S.A., £261                             |  |
| <b>Guano—</b>                            |  |
| Manila, 5 t. ½ c.                        |  |
| <b>Lamp Black—</b>                       |  |
| Sydney, £39                              |  |
| <b>Lead Nitrate—</b>                     |  |
| Genoa, £49                               |  |
| <b>Lime—</b>                             |  |
| Nickerie, £44                            |  |
| <b>Linseed Oil—</b>                      |  |
| Manila, £60                              |  |
| Penang, 2 t. 10 c.                       |  |
| Iloilo, 30                               |  |
| <b>Logwood—</b>                          |  |
| Oporto, £55                              |  |
| <b>Magnesium Sulphate—</b>               |  |
| Sydney, 5 t. 11 c.                       |  |
| <b>Paint—</b>                            |  |
| Hong Kong, £43                           |  |
| U.S.A., 45                               |  |
| <b>Painters' Colours—</b>                |  |
| Bangkok, £39                             |  |
| Hong Kong, 38                            |  |
| Manila, 430                              |  |
| Penang, 35                               |  |
| Rangoon, 42                              |  |

|                              |  |
|------------------------------|--|
| Singapore, 109               |  |
| Yokohama, 20                 |  |
| Bergen, 11                   |  |
| Brisbane, 523                |  |
| Rockhampton, 31              |  |
| St. John's, N.F., 220        |  |
| <b>Paraffin Wax—</b>         |  |
| Genoa, £357                  |  |
| Leghorn, 30                  |  |
| Naples, 228                  |  |
| Rouen, 82                    |  |
| Barcelona, 464               |  |
| Italy, 31                    |  |
| <b>Potash Salts—</b>         |  |
| Mexico City, £425            |  |
| <b>Potassium Bichromate—</b> |  |
| Genoa, £604                  |  |
| Leghorn, 198                 |  |
| Venice, 2 t. 9 ½ c.          |  |
| Yokohama, 783                |  |
| Rouen, 263                   |  |
| U.S.A., 245                  |  |
| Amsterdam, qty.              |  |
| Rotterdam, 197               |  |
| Barcelona, 197               |  |
| <b>Potassium Prussiate—</b>  |  |
| Barcelona, £179              |  |
| <b>Rosin Oil—</b>            |  |
| Philadelphia, £22            |  |
| <b>Soap—</b>                 |  |
| Rangoon, 3 t.                |  |
| Shanghai, 2 8 c.             |  |
| Singapore, 1 11½             |  |
| Puerto Cortes, 2 2½          |  |
| <b>Sodium Bichromate—</b>    |  |
| Genoa, 26 t. 7½ c.           |  |
| Leghorn, 3 10                |  |
| Rouen, 8 18                  |  |
| Amsterdam, £50               |  |
| <b>Starch—</b>               |  |
| Barcelona, £45               |  |
| <b>Sulphuric Acid—</b>       |  |
| Rangoon, £1,698              |  |
| <b>Tallow—</b>               |  |
| Rangoon, 3 t. 18 c.          |  |
| <b>Tartaric Acid—</b>        |  |
| Rotterdam, £140              |  |
| <b>Treacle—</b>              |  |
| Bergen, 2 t. 11 c.           |  |
| Drontheim, 11½               |  |
| Christiania, 11 1            |  |
| <b>Turpentine—</b>           |  |
| Manila, £30                  |  |
| <b>Varnish—</b>              |  |
| Hong Kong, £42               |  |
| <b>White Lead—</b>           |  |
| Singapore, £118              |  |
| Sydney, 327                  |  |
| <b>Zinc Ashes—</b>           |  |
| Rotterdam, 11 t.             |  |

# TYNE.

Week ending March 28th.

|                           |  |
|---------------------------|--|
| <b>Alkali—</b>            |  |
| Antwerp, 2 t. 4 c.        |  |
| Libau, 5 10               |  |
| Gothenburg, 4 19          |  |
| Christiania, 10 12        |  |
| <b>Ammonium Chloride—</b> |  |
| Gothenburg, 1 t. 11 c.    |  |
| <b>Antimony—</b>          |  |
| Antwerp, 1 t.             |  |
| Hamburg, 5                |  |
| Rotterdam, 10             |  |
| <b>Arsenic—</b>           |  |
| Gothenburg, 1 t. 7 c.     |  |
| <b>Barium Carbonate—</b>  |  |
| Antwerp, 19 t. 18 c.      |  |
| Copenhagen, 2             |  |
| <b>Benzol—</b>            |  |
| Hamburg, 1 c.             |  |
| <b>Bleaching Powder—</b>  |  |
| Rouen, 6 t. 16 c.         |  |
| Antwerp, 25 1             |  |
| Hamburg, 32 15            |  |
| Rotterdam, 12 19          |  |
| Drontheim, 15 4           |  |
| Copenhagen, 34 13         |  |
| Libau, 19 17              |  |
| Gothenburg, 25            |  |
| Christiania, 2 11         |  |
| <b>Caustic Soda—</b>      |  |
| Antwerp, 4 t. 18 c.       |  |
| Hamburg, 2 12             |  |
| Ancona, 15 5              |  |
| Copenhagen, 2 18          |  |
| Libau, 4 18               |  |
| <b>Fluor Spar—</b>        |  |
| Hamburg, 20 t. 10 c.      |  |

|                             |  |
|-----------------------------|--|
| <b>Glue—</b>                |  |
| Gothenburg, 10 c.           |  |
| <b>Litharge—</b>            |  |
| Hamburg, 14 t. 10 c.        |  |
| Rotterdam, 1 1              |  |
| Gothenburg, 1 1             |  |
| Christiania, 11             |  |
| <b>Magnesia—</b>            |  |
| Hamburg, 2 c.               |  |
| <b>Manganese—</b>           |  |
| Bilbao, 100 t.              |  |
| Arendal, 14 c.              |  |
| <b>Ochre—</b>               |  |
| Christiania, 2 t. 16 c.     |  |
| <b>Paint—</b>               |  |
| Antwerp, 2 q.               |  |
| Hamburg, 1 t. 10 c.         |  |
| Rotterdam, 18               |  |
| Copenhagen, 1 dm. 4         |  |
| Bergen, 3                   |  |
| <b>Soda—</b>                |  |
| Randers, 5 t. 7 c.          |  |
| Rotterdam, 42 17            |  |
| Drontheim, 4 9              |  |
| Christiania, 10             |  |
| <b>Soda Ash—</b>            |  |
| Antwerp, 10 t. 4 c.         |  |
| Bergen, 6                   |  |
| Ancona, 9 1                 |  |
| Copenhagen, 11 12           |  |
| Gothenburg, 19 14           |  |
| Christiania, 14 19          |  |
| <b>Sodium Hyposulphite—</b> |  |
| Hamburg, 1 t.               |  |
| <b>Sodium Sulphate—</b>     |  |
| Christiania, 25 t. 4 c.     |  |
| <b>Sulphur—</b>             |  |
| Gothenburg, 60 t.           |  |
| <b>Varnish—</b>             |  |
| Bergen, 1 c.                |  |
| <b>White Lead—</b>          |  |
| Copenhagen, 1 t. 19 c.      |  |
| Lisbon, 4 19                |  |

# GOOLE.

Week ending March 25th.

|                                          |  |
|------------------------------------------|--|
| <b>Benzol—</b>                           |  |
| Antwerp, 50 cks.                         |  |
| Boulogne, 49                             |  |
| <b>Chemicals (otherwise undescribed)</b> |  |
| Ghent, 2 cks.                            |  |
| Harlingen, 20                            |  |
| <b>Coal Products (otherwise undes.)—</b> |  |
| Antwerp, 5 cks.                          |  |
| Boulogne, 1 1 cs.                        |  |
| Ghent, 2 2                               |  |
| Hamburg, 1 1 1 pk.                       |  |
| Rotterdam, 140                           |  |
| <b>Colours—</b>                          |  |
| Amsterdam, 3 cks.                        |  |
| Boulogne, 2 1 cs. 3 pks.                 |  |
| Dunkirk, 4 dms.                          |  |
| Ghent, 1 8                               |  |
| Rotterdam, 1 5                           |  |
| Rouen, 1                                 |  |
| <b>Dyestuffs (otherwise undescribed)</b> |  |
| Hamburg, 65 cks.                         |  |
| <b>Manure—</b>                           |  |
| Bruges, 366 bgs.                         |  |
| Dunkirk, 390                             |  |
| <b>Pitch—</b>                            |  |
| Antwerp, 897 t.                          |  |

# GRIMSBY.

Week ending March 28th.

|                                          |  |
|------------------------------------------|--|
| <b>Alkali—</b>                           |  |
| Port au Prince, 300 cks. 34 dms.         |  |
| <b>Chemicals (otherwise undescribed)</b> |  |
| Antwerp, 2 cks.                          |  |
| <b>Coal Products (otherwise undes.)—</b> |  |
| Antwerp, 3 cks.                          |  |
| Dieppe, 109 2 pks.                       |  |
| Hamburg, 52 1 cs.                        |  |
| Rotterdam, 5                             |  |
| <b>Colours—</b>                          |  |
| Antwerp, 1 ck. 12 cs.                    |  |
| Port au Prince, 86                       |  |
| St. Thomas, 4                            |  |
| <b>Dyestuffs (otherwise undescribed)</b> |  |
| Dieppe, 9 cs.                            |  |
| <b>Manure—</b>                           |  |
| Antwerp, 56 t.                           |  |
| Dieppe, 100 bgs.                         |  |
| Esbjerg, 3,055                           |  |
| <b>Soap—</b>                             |  |
| Dieppe, 7 cs.                            |  |







# THE CHEMICAL TRADE JOURNAL

AND  
OIL, PAINT and COLOUR REVIEW.

Publishing Offices: 32, BLACKFRIARS STREET, MANCHESTER.

No. 465.

SATURDAY, APRIL 18, 1896.

Vol. XVIII.

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## LATE ADVERTISEMENTS.

### TENDER.

RICHMOND MAIN SEWERAGE BOARD.

CONTRACTS FOR STORES.

THE Board are prepared to receive Tenders for the following STORES required at their Works during the year ending 31st May, 1897:—

1. Steam Coal (Welsh).
2. House Cobble.
3. Lime, for Precipitation.
4. Lime, for Sludge Pressing.
5. Sulphate of Alumina, etc.
6. Filter Cloth.

Specifications may be seen, and forms of Tender obtained, on personal application to the Engineer, Mr. WILLIAM FAIRLEY, Main Drainage Works, Mortlake, S.W. Sealed Tenders, on the forms supplied by the Board, to be delivered to the undersigned on or before Tuesday, the 12th May, 1896.

Security for due fulfilment of Contracts will be required in accordance with the provisions of the Public Health Act, 1875.

The Board do not bind themselves to accept the lowest or any Tender.

J. LESLIE G. POWELL,

Clerk to the Board.

17, The Green, Richmond, Surrey,  
April, 1896.

A FIRM of Chemical Manufacturers and Brokers are prepared to make favourable terms with anyone having large connection and able to introduce new good paying department or speciality in Chemical or allied trades. Particulars in confidence to "Mutual," *Chemical Trade Journal* Office, Manchester.

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Each additional 10 words .....

0s. 3d.

11

## THE ADULTERATION OF FERTILIZERS AND FEEDING STUFFS.

THE recently published report of the consulting chemist to the Royal Agricultural Society, on the adulteration of fertilizers and feeding stuffs during 1895, is very interesting, as it gives a fairly good insight into the working of the latest legislation in this connection.

The direct adulteration of well-known fertilizers does not appear to be practised so much as the substitution of comparatively worthless preparations under names that cause them to be accepted by the unwary as identical with better known and efficacious materials.

In connection with feeding stuffs there is apparently far more genuine adulteration to be coped with, especially in connection with those excellent but occasionally mysterious preparations sold as compound cakes. The Act of 1891 does not seem to have been framed so as to adequately deal with these preparations. The question of purity does not come in, and, although testing well, there is reason to apprehend that some of the components are obtained from indifferent sources, while others are either unsound or inferior.

Russian linseed cakes—so-called—also appear to be of doubtful value, and by reason of their ingeniously worded appellation open the door to considerable deception. This outlet has, however, been practically closed by the Chemical Committee of the Society, who have warned dealers, in a circular, that the invoicing of goods as linseed cake, whether qualified by an adjective or not, is held by the law to imply a warranty that the article is pure, or, in other words, prepared from linseed only. That many of these Russian cakes are largely mixed with spurry, rape, and mustard seeds the analyses made by the Society only too clearly show. In connection with cakes, the desirable practice of selling by "guaranteed analysis" is of itself liable to become a source of evil. This is not so much due to any fault on the part of the law, or in one sense of the seller, as to the carelessness of the buyers, who are quite content if the goods are sold to them on a guaranteed analysis, which is a very different thing to buying on a guarantee. Farmers do not seem to appreciate these subtleties of business tactics, while on the other hand there are plenty who are fully alive to the possibilities of taking advantage of the confidence inspired by the word "guaranteed." As a matter of fact all makers are not in the same boat, but Dr. Voelcker is of the opinion that there are tons and tons of mixed cakes sold which if analysed would not come up to the made-much-of guaranteed composition. In consequence, those who purchase in this blindfold fashion (being tempted to do so perhaps by a slight concession in price) are constantly finding, as the result of the deal, that it was not the feeding cake alone that the vendor "sold." The realisation of this, however, is arrived at too tardily, as a rule, to enable the sufferers to obtain any redress; so they grumble at, and blame every-



body except themselves, and everything save their own callousness for allowing such "sharks" to exist. Yet the chances are that six months later they will again fall victims to the first stranger who comes along with a low-priced, craftily-named article, the merits of which are ardently but apparently disinterestedly pleaded in plausible and persuasive tones.

With regard to fertilizers proper, the chief difficulty seems to arise not from the selling of actually worthless preparations, but from the habit of charging exorbitant prices for low grade fertilizers which at a fair price would be well worth purchasing.

Thus, a special mangel manure offered at 140s. per ton could only show on analysis sufficient fertilizing ingredients to bring the actual value up to 90s. Another eye-opener was a manure costing 70s., that proved on analysis to be worth less than 25s. per ton.

While the report directly says a good word for basic slag, it indirectly says something better by showing up, at some length, how easily slag manures, that are not made from basic slags, can be "written up" so as to rival the genuine article, in spite of the distinct admission that the substitute is not a basic slag. Such statements are supplemented by analyses, and though such important ingredients as potash and phosphoric acid only occur to the extent of "traces," this deficiency is discounted by ingeniously, if not altogether truthfully, extolling the valuable part played by the remaining components when placed on the soil.

Apart from this particular phase of adulteration, few cases have been met with, and even those are comparatively insignificant.

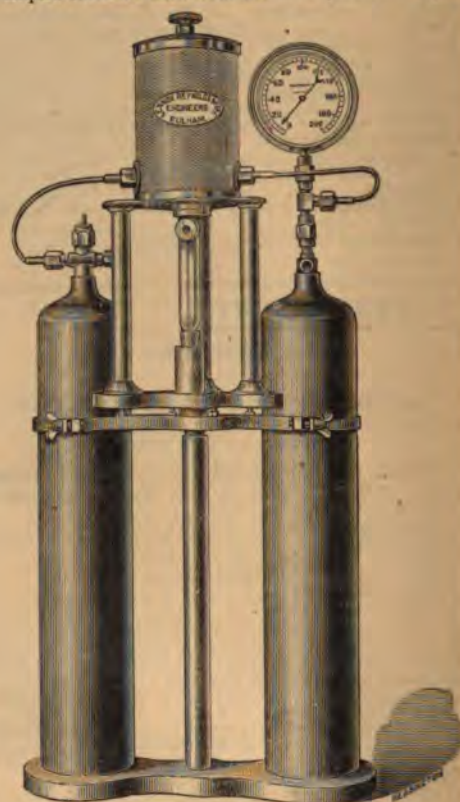
The present Act therefore is apparently not only capable of doing good, but has done good, while the future benefits to be derived depend almost wholly upon the efforts farmers make to protect themselves. Unfortunately, many of them seem to think that an Act of Parliament ought not only to afford them the means for protection against fraud, but ought, further, to find out all fraudulent dealers and include them in the schedule. So long as agriculturists persist in adopting this childish attitude of plaintive passivity their calling will be a barren one, and they themselves unappreciated martyrs.

### PROFESSOR DEWAR'S LIQUID AIR REFRIGERATOR.

THOUGH the liquefaction of air and other gases is a subject which has been brought into considerable prominence during the last ten years, the physical laws relating thereto were fully demonstrated some thirty or forty years ago by Joule and Thompson.

Piazzi Smyth, in 1839, showed that when compressed air was permitted to flow a reservoir through a nozzle that there was a considerable reduction in the temperature of the air. Later, Faraday, at the Royal Institution, demonstrated the same, but in his liquefaction researches he always employed cooling as well as pressure to effect his purpose. He succeeded in liquefying all gases except oxygen, hydrogen, nitrogen, carbonic oxide, and nitric oxide. How near he came to liquefying oxygen can now be realised when we know that he had oxygen compressed in a tube to 90 atmospheres pressure, cooled with carbonic acid exhausted with a good air pump. Had his apparatus only been a little more perfect, oxygen would have been liquefied 35 years before Cailletet or Pictet tackled the problem. Probably many a far-reaching discovery has been delayed for years for similar reasons. In the year 1857 Sir William Siemens, who invented the regenerator for heat, took out provisional protection for an interchanger for cold, a principle which is employed in almost every modern refrigerating machine. In 1882, Coleman and McKendrick, using such an interchanger with a small Bell-Coleman Refrigerator, reached a temperature as low as  $-90^{\circ}\text{C}$ ., and in a lecture at the Royal Institution stated that there was no reason, except expense, why much lower temperatures and the production of liquid air in quantity could not be obtained. Pictet, Cailletet, and Dewar had before this demonstrated the possibility of the liquefaction of air and oxygen, but it remained for Dewar to make the production of such liquids possible in quantity, and to

place within the reach of all a new field for discovery and attainment of research which must ultimately wrest from Nature many of her most profound secrets. A good beginning has already been made to witness the many recent important researches made at the Royal Institution. However, the field is so large that it would be impossible for one institution or individual to do more than explore the borderland of the subject, so Professor Dewar has devoted some of his time to devising an apparatus, requiring little skill or attention to manage which can be used in any laboratory to demonstrate the properties of liquid gases or for research work. In fact, 100 c.c. of liquid oxygen at atmospheric pressure and a temperature of  $-180^{\circ}\text{C}$ . can be obtained with about as little trouble as distilling the same quantity of water. This apparatus, which we illustrate, has been put on the market by Messrs. Lennox, Reynolds, and Fyfe, of Rosebank, Fulham, London, S.W., the sole makers. It consists of two cylinders of compressed gas, carbonic acid, and oxygen or air and a Refrigerator. The principle on which this apparatus works is as follows:—Liquid carbonic acid from the first cylinder is injected



chamber containing a coil of copper tube, cooling it to  $-80^{\circ}$ . Through this coil is passed compressed air or oxygen, which, after being cooled to  $-80^{\circ}$ , is led into an "interchanger." At the bottom of the interchanger is a valve which expands the compressed gas into a vacuum tube. In expanding, the gas is lowered in temperature about 100 degrees, so that for every atmosphere it has been compressed ( $120 \times 25 = 3000$ ), the expanded gas then travels back over the interchanger, and is cooled below the critical point of air or oxygen, which at this stage comes out of the valve like a jet of steam; shortly after it liquefies, and is collected in the tube. Using 4 lbs. of carbonic acid and 35 cubic feet of oxygen 100 to 150 c.c.'s of liquid is produced. The construction of such apparatus involves design and work of the highest order. The balancing of parts, insulation, material, and strength have all to be so arranged as to prevent leakage of heat.

This is the crux of the problem, and the makers have truly succeeded when such results are obtainable with the small quantity of material in circulation, no motive power being required, only of compressed gases.

GERMAN CHEMICAL DIVIDENDS.—The Badische Anilin- und Soda-Fabrik, of Ludwigshafen, has declared a dividend of 26 per cent. for last year, as against 25 per cent. for 1894. The gross profit for 1895 was £394,988. The dividend of Meister, Lucius, and Brüning, of Höchst-on-the-Main, for last year will be at the rate of 10 per cent., which is the same as the dividend declared for 1894.



## The Patent List.

*It is compiled from Official sources in the Manchester Laboratory, under the immediate supervision of Davis and Alfred R. Davis, who report professionally value of Chemical Patents.*

### NOTIFICATIONS FOR ENGLISH LETTERS PATENT.

**Plants in Filter Presses.** W. E. Heys. 6,873. March 30.  
**Cyanides from Blast Furnace Dust and other Crude Sources.** 6,887. March 30.  
**Metals from Ores by Chlorine Gas.** O. Frölich. 6,921.  
**Generating Sodium or Potassium Chloride and Generating Electricity.** in and F. Marza. 7,000. March 31.  
**Ammonia from Waste Sugar Extraction Lyes.** H. H. Lake. March 31.  
**Process for Obtaining Potassium Cyanide.** A. C. Thomson. 7,062.

**Metallic Sulphides.** A. von Siemens. 7,123. April 1.  
**Ammoniacal Salts, also Nitric Acid and Nitrates from Air.** 7,124. April 1.  
**Oils from Fish Refuse and other similar Offal.** The Fish on Syndicate, Ltd., and J. C. W. Stanley. 7,269. April 3.  
**Preparation of Double Sulphides of Aluminium, or Double Compounds of Aluminium with other Sulpho-metal or Metallic Salts.** D. A. Peniakoff. 7,273. April 4.

### ABSTRACTS OF LATEST COMPLETE SPECIFICATIONS.

*Abstracts are specially prepared for the Chemical Trade Journal. RIGHTS of publication are RESERVED. This is the earliest abstracts of Chemical and allied patents accessible to the public.*

**Plants in Apparatus for Drying by Means of Furnace Gases.** F. D. Cummer, 1,051, East Madison-avenue, Cleveland, Ohio, Eng. Pat. 15,052. August 27, 1895.

The apparatus is designed to dry such substances as sulphate and soda, salt, lime, clay, etc., by means of the products of a furnace and heated air. The patent is purely a mechanical one, and in detail with the construction of the apparatus, which is known as the "Cummer" Dryer. There are eight drawings, showing the general and detailed construction of the apparatus, which, if the letterpress, must be consulted for further information.

**Plants in Apparatus for Sampling Gases for Analysis.** B. L. van der Meer, No. 15, Koningsplein, Amsterdam. Eng. Pat. June 1, 1895.

The apparatus is a bell is suspended over a pulley by a chain and balance so that it can be raised or lowered in a larger surrounding vessel filled with water. A conical float inside the bell keeps the gas apart. A small wash bottle is fixed on the top of the bell to show the rate at which the gas is passing. When working the bell is lowered until below the level of the water in the outer vessel, so that the gas is expelled. Additional weights are now added to those on the bell, with the result that the latter is slowly raised until the desired volume of gas is created. In this way the sample of gas can be taken at any desired speed, as indicated by the passage of the gas through the wash bottle, by regulating the weight added to the bell. To prevent the bell being raised so high as to become out of the water in the outer vessel, a stop plate is fixed to the side of the outer vessel, which catches the descending bell and arrests them. If a sample is wanted for analysis, the bell is removed, when the bell sinks with its own weight, and the gas is forced out through an exit pipe provided at the top. In this way a large and average sample can be automatically collected over a period of time, and a testing sample withdrawn at any time that is either convenient or convenient.

**Plants in Insecticides.** I. S. McDougall, 68, Port-street, Manchester, and I. S. McDougall, 10, Mark Lane, London. Eng. Pat. 9,535. May 14, 1895.

The invention relates to the attacks of insects in plant life, both indoors and outdoors, and remedies have hitherto been either in the form of washes or sprays. With washes, drought, or conditions of perpetual scarcity frequently make it impossible to properly supply a liquid over extended areas, such as hop gardens. To obviate this, it has been found to be distinctly advantageous to incorporate insecticides with a suitable absorbent, so that the whole can be applied as a powder. Various mixtures can be used, the following being cited as examples:—(a) 10% of tobacco extract and precipitated sulphate of lime; (b) extracts of tobacco and lac sulphur, dry soap, and kieselguhr; (c) arseniate of soda and extract of quassia, and finely powdered vegetable fibre.

## SOCIETY OF CHEMICAL INDUSTRY.

### MANCHESTER SECTION.

THE first business of the meeting of this section, which was held on the 10th inst., was the election of five members to fill vacancies on the Committee of the Section. During the counting of the votes the Chairman (Mr. George E. Davis) read a letter from Mr. Hargreaves, of Widnes, in which he extended an invitation to the members of the section to go over to Farnworth and see his electrolytic process for the decomposition of salt at work. The question of inviting the Society to meet in Manchester in 1897 was also brought before the meeting. The Chairman said it was now about ten years since the parent Society met in Manchester. This year the Society was meeting in London, and the Committee of the section thought that next year an invitation should be given to hold the meeting in Manchester. Dr. Schunk, of Manchester, had been invited to allow himself to be nominated as president for next year, and he had accepted the invitation. He moved that an invitation should be given for the holding of the 1897 meeting in Manchester. The motion was seconded by Mr. H. Grimshaw, and unanimously adopted. The scrutineers then announced that the ballot had resulted in the election of Mr. R. le Neve Foster, Dr. Gerland, Dr. Lewkowitsch, and Dr. Watson. Mr. R. J. Flintoff then read a paper on "The functions of albumen as a fixing agent for pigments on cotton," in which he stated that the functions were two-fold, viz., the well-known one of "occlusion" and the other that of increasing the opacity of the layer of colour, and at the same time increasing its reflecting power, thereby apparently increasing the colour of the body. The second of these two functions he named "intensification." The property of "intensification," he added, was not confined to albumen, but was possessed by many substances capable of holding pigments in a homogeneous state in suspension, and also of forming a suitable medium for their even distribution over the surface of the cotton fabric. Mr. Peter Hart described an apparatus for economising the waste steam from the air compressing engines in chemical works, and Mr. J. Barnes submitted a short paper on "The preparation of water free from ammonia," the outline of which has already appeared in the *Journal*, 456, p. 116. The next meeting will be held on Friday, May 1st.

## FIRE AT THE PENNSYLVANIA SALT MANUFACTURING COMPANY'S WORKS.

WHAT was a destructive and promised to be at one time a very severe fire occurred at the works of the Pennsylvania Salt Manufacturing Company, Natrona, Pa., U.S.A., on the evening of Saturday, March 21st. The plant covers some twenty acres of ground, and the different departments are so distinct from one another that it was possible to confine the fire to the smelting works, in which it originated, thus preventing any injury to the chemical branch. The investment represented by the entire works exceeds \$1,000,000, but the loss, instead of reaching that figure, as was stated in the Press despatches, will only reach about \$100,000. The fire originated in the copper smelting plant, to which it was confined by hard effort on the part of the company's own fire department and the assistance from the townspeople. The greatest loss was sustained through the melting of the tanks, in which gold and silver solutions were stored, and their escaping into the river. Some idea of this may be gained when it is said that 100,000 ounces of silver and 3,000,000 pounds of copper were produced monthly. This department consisted of a large number of frame buildings, covering an area of three acres, and which contained blast furnaces, smelting furnaces, and lead-lined tanks for storing the gold and silver solutions.

It is most fortunate for the company, as well as for its extended list of customers throughout the country, that no damage was done to the chemical works, and that their operations will be in no way interfered with. The daily output of this department is so extensive and is depended upon by so many other industries which employ the products of the Pennsylvania Salt Manufacturing Company, that the results of the fire would have been much more serious had it extended beyond the smelting works. There has, however, been no interruption to the usual prompt filling of orders for these goods, and special advices from the works advise us that the trade may be assured that there will be none. The work of rebuilding the burned portion of the works will be at once proceeded with.

THE NEW CONVEYOR CO., LTD.—About a year ago this company acquired the engineering works of Messrs. Stone Bros. and Co., Smethwick, Birmingham, and all the shops are now in full operation equipped with modern tools, a number of which are designed specially for the economical production of conveyors, elevators, and labour-saving machinery.



## THE LIFE WORK OF LIEBIG.

By A. HOWARD.

(Concluded from page 240.)

*Physiology.*—Liebig was very conscious of the vast importance of physiological studies, and at one time he even contemplated occupying himself with medicine; and, though this idea was never carried out, a great part of his life was devoted to efforts to advance medical science through physiology. His first work on animal chemistry constituted the second part of his report to the chemical section of the British Association in 1842. In it he traced the applications of organic chemistry to animal physiology and pathology.

Just as Lavoisier during the latter half of the previous century had laid the foundation of what may almost be called a new science, by the success with which he applied to chemistry methods that had long before been employed in physics—*i.e.*, the use of weights and measures—so Liebig aimed at applying the new and altered views that had been introduced into organic chemistry to the elucidation of the problems of physiology. Before Liebig directed his attention to physiology, physiologists had chiefly concerned themselves with the forms of organised bodies and of the phenomena of motion within them, whilst the study of the uses and functions of the different organs and of their mutual connection in the animal body had, to a great extent, fallen into the background.

A hundred and fifty years ago chemistry and physics had comparatively little in common. A hundred years afterwards it had become difficult to draw a line between them. Liebig looked forward to the time when chemistry and physiology would similarly be so fused together as to make it difficult to clearly separate the one from the other.

In spite of the almost universal reluctance of investigators before Liebig's time to abandon the idea that in biological processes all manifestations of chemical and physical action are in some mysterious way modified and overruled by a special vital force, Wöhler had weakened their hold on this idea by producing *urea* from mineral sources; Prout had observed the presence of hydrochloric acid in the stomach; Gurelin and Tiedemann had investigated the processes of digestion; Wöhler had observed that salts of organic acids in passing through the animal body are converted into carbonates, and many other isolated but valuable contributions to animal chemistry had been made.

Thus, when Liebig turned his mind to the study of the chemistry of physiology, he found a mass of facts ready to his hand, and a soil which was not unprepared to receive his ideas. It was therefore under auspicious conditions that he attempted the task of elucidating the action of chemical and physical laws in the life processes of animals.

The most interesting of all Liebig's teachings in physiological chemistry are doubtless those which deal with the relation of plants and animals to each other and to their environment.

Another interesting question which Liebig examined was that of the origin of the heat of the animal body. The temperature of every healthy human being is about  $98^{\circ}\cdot5\text{F.}$ , or  $37^{\circ}\text{C.}$  A human being in a state of rest loses enough heat in 24 hours to melt 66 pounds of ice, so that in the course of a lifetime one person produces heat sufficient to melt a small iceberg. Long before Liebig's time Lavoisier perceived the analogy between the processes of combustion and respiration; for both of them air is required, and by both of them carbonic acid gas is formed. Lavoisier and Laplace suggested that the heat evolved by the animal corresponds to the heat of combustion of the carbon and hydrogen of the food. Subsequently this was tested by experiment. The result showed that about 90 per cent. of the heat evolved by an animal can be accounted for in this way. Ten per cent. remained, which, it seems, could not have come from the combustion of the food. This result was accepted, and new sources of heat were suggested by nervous actions and friction within the animal organism. Liebig made fresh experiments on the subject, and became convinced that the whole of the sensible heat produced in an animal body could be accounted for by the processes of oxidation which occur within the organism. To-day the correctness of Liebig's decision is so completely established that it may be regarded as one of the truisms of science.

In some of his contributions to physiology Liebig discussed the classification of foods, and dealt generally with the chemistry of the food of animals. The components of plants on which animals feed include:—

1. The *non-nitrogenous* substances, carbohydrates and hydrocarbons.
2. The *nitrogenous* substances, the most important of which are the *albuminoids*.

Liebig's attention had been drawn to the similarity between the nitrogenous constituents of plants and animals, and on looking into the matter, he found that the two classes of substances closely corresponded in their chief properties. Now the graminivorous animals form a link between the plants and the flesh-eating animals, consequently this discovery threw light on the mutual relations of the plant and animal kingdoms in nature. Since vegetable albumin and fibrin are so little

different from animal albumin and fibrin, it seems to follow that produce the blood of animals. It is well known that nitrogenous stuffs are absolutely essential for animals. Liebig argued from facts that the animal organism gives to the blood only its form; is incapable of creating blood except out of substances which contain its chief constituents.

Liebig illustrated the importance of albuminous substances to life by calling attention to the changes in which a chick develops an egg. Both the white of an egg and the yolk are largely composed of albuminoids. When an egg has been impregnated, and when maintained at a suitable temperature by means of the oxygen of the air, it gradually develops all the parts of the animal body. In the end all the albumin disappears. Evidently albumin, he said, is the foundation of the whole series of tissues which constitute those which are the seat of vital actions.

Liebig divided foods into two classes:—

1. *Plastic foods*, nitrogenous substances. These serve to form and to build up the various organs of the body.
2. *Respiratory foods*, non-nitrogenous substances, fats and hydrates. These serve for the generation of heat.

For a long time this classification was generally accepted. Its classifications, however, it was imperfect.

It is difficult to draw the line between plastic and respiratory and physiology now teaches us that all varieties of food are assimilable and respiratory. But the value of a conception of the does not depend on its actual and final truthfulness; it depends on usefulness. A theory, as Liebig always taught, is only a tool.

It is found convenient to retain Liebig's classification of foods into nitrogenous and non-nitrogenous groups—the members of the groups exhibit marked differences in their effect on the organism. Nitrogenous foods are capable of sustaining animal life, though not usually advantageously. Non-nitrogenous foods, on the other hand, are quite incapable of sustaining life. Mineral salts, of course, are necessary in addition to these organic food stuffs.

In the last section of his "Chemistry of Food," Liebig dealt with the chemistry of cookery so far as concerns the use of flesh. Obviously, he pointed out, that if the flesh employed for food becomes again flesh in the animal body, none of the constituent flesh ought to be withdrawn from it in its preparation for the table.

The investigation of these matters leads us to Liebig's celebrated extract of meat. By boiling down extract of lean flesh in a water bath we can obtain "Liebig's extract of meat." This extract is not merely a useful stimulant, ranking perhaps with tea or coffee.

In concluding his contribution to domestic chemistry, Liebig dealt with the processes of salting and preserving meat. By collecting brine from a given piece of flesh, which had been pickled, he found that it corresponded to about  $\frac{1}{2}$  of the juice of the given piece. Analysing this brine Liebig discovered that it contained the constituents of soup. This explained why salt meat, when solely used as food, led to many disorders.

*Labours as a Teacher, etc.*—Liebig stayed at Giessen for 20 years. Speaking of his life there, he said afterwards, "It was as if Providence had led me to the little university. At a larger university, in a larger town, my energies would have been divided and dissipated. It would have been much more difficult, and perhaps impossible, to reach the goal at which I aimed; but at Giessen everything was concentrated in work, and in this I took passionate pleasure."

Liebig's own words give the best idea of the method of teaching adopted at Giessen:—

"Actual teaching in the laboratory was only for the beginning. The progress of my special students depended on themselves. I gave them a task, and supervised the carrying out of it, as the radii of a circle all their common centre. There was no actual instruction. I met from each individual every morning a report upon what he had done on the previous day, as well as his views on what he was engaged in. I approved or made my criticisms. Every one was obliged to follow his own course. In the association and constant intercourse with the others, and by each participating in the work of all, everyone progressed. Twice a week I gave a sort of review of the important questions of the day; it was mainly a report of my own work, combined with the researches of other chemists."

"We worked from break of day to nightfall. Dissipations and amusements were not to be had at Giessen. The only recreation which was continually repeated, was that of the attendant, who was not get the workers out of the laboratory in the evening, and wanted to clean it."

"The remembrance of this sojourn at Giessen awakened in my pupils an agreeable sense of satisfaction for well-spent time."

"The production of organic preparations was an object to which I gave very particular attention; it is very much more important than is usually believed, and one can more frequently find men who can make very good analyses than such as are in a position to produce organic preparations in the most judicious way. The formation of a prep-



and, at the same time, a qualitative analysis; and there is no y of making one's self acquainted with the various chemical s of a body than by first producing it out of the raw material converting it into its numerous compounds and so becoming ed with them."

ere the methods adopted for teaching chemistry at Giessen. re justified by the results obtained.

y remains to indicate Liebig's influence on the progress of

erations pass away, and the deeds and capacities of great men be truly estimated, it will be found that the name of Liebig position very close to those of Lavoisier and Dalton, the leaders in our science. It is not as the author of the 317 tions, the titles of which fill the pages of the Royal Society, nor as the great originator of a scientific physiology and re, nor again as the writer of numerous handbooks, that Liebig most for science; his greatest influence has been a personal t is to him that most chemists now living indirectly owe their existence. The Giessen Laboratory was the first one in which ce was truly taught, and from this centre the flame of original was carried throughout all lands by ardent disciples, who more cessfully continued, both as regards tuition and investigation, ter's work.

paring this account of Liebig's work, I have freely made use sources of information at my command. In particular, I knowledge the assistance I have derived from Mr. W. A. e's admirable work on Liebig, to the pages of which I would those who wish to make themselves more familiar with the he great German chemist.

## Reports of Companies.

### THARSIS SULPHUR AND COPPER COMPANY.

directors of the Tharsis Sulphur and Copper Company, nited, in their report for the year ending 31st December, 1895, om the Tharsis mines the mineral extracted during the year 278,441 tons, against 335,896 tons in 1894, a decrease of ns. From the Esperanza deposit 226,249 tons of schist were , against 315,077 tons in 1894, the quantity of schist remain- is deposit available for profitable working being now of limited

From the Calanas mines the mineral extracted weighed ns, against 254,531 tons in the previous year, an increase of ns. At Calanas operations of a special kind are being prosecuted, which it is anticipated will have valuable results mediate future. A considerable extension of the open cast is being made to the westward, necessitating, in the first a heavy removal of overburden. This is being accomplished enditure unprecedentedly low for this kind of work, and as it a large quantity of mineral of good quality will be made . There has also been in course of construction during the

ew reservoir or dike, to provide much needed additional for water. It is now almost completed, and will increased quantities of the ore less suitable for export eated on the spot. At Lagunazo mines the extraction as now been fairly commenced, 35,618 tons having been of a quality thoroughly satisfactory in regard to its copper , and the directors look forward hopefully to the further ent of this mine, which is proving a valuable addition to the of the company. The total quantity of mineral raised at all s during the year has been 612,483 tons, against 588,427 tons -an increase of 24,056 tons. Both for export and for local t the quantities raised have exceeded those of the previous The production of copper at the mines has this year been the t the history of the company. This satisfactory result has been measure due to the abundant supply of water all through the e rainfall having been very favourable. At Tharsis it 141'35 inches, and at Calanas 34'51 inches, against 25'26 and es respectively for the previous twelve months. So far as nt year has gone the water supply has been ample, and as the reservoirs are well filled there seems no reason meantime to id any scarcity of this important element. The working costs to compare favourably with those of previous years. In ection careful economy is practised, while thorough efficiency ined; and every attention is given to whatever may, in any tribute to the successful working of the mines. The railways s have been kept in efficient working order, and during the railway revenue has benefited by an increase in public traffic. ments of pyrites in 1895 were 197,832 tons large mineral, 22,996 ll, and 6,001 tons of washed mineral—in all, 226,829 tons against 209,240 tons in 1894, an increase of 17,589 tons. Of precipitate 9,443 tons were shipped, against 7,386 tons in the

previous year. The metal works have done a large amount of profitable work during the year, the refined copper produced having exceeded last year's quantity by nearly 1,200 tons, this increase having been mainly due to the larger shipments of precipitate from the mines. Valuations have received attention, and from "mines in Spain" there has been written off for Tharsis and Calanas the sum of £20,000, and for Lagunazo £3,690. os. 5d. The sum of £20,000. has also been written off the amount standing against railways, rolling stock, and shipping piers, apportioned rateably over these assets. The net profits for the year, together with the balance of £14,948. 2s. 9d. brought forward from 1894, as shown by the profit and loss account, amounted to £234,439. 3s. 2d.; and the directors recommend (1) that the sum of £218,750. be appropriated to the payment of a dividend of 7s. per share, equal to 17½ per cent. on the capital of the company, free of income-tax, payable on or after Friday, the 8th day of May next; and (2) that the balance of £15,689. 3s. 2d. be carried forward to the credit of the year 1896. During the year the directors elected Mons. E. J. Desmarest, banker, Paris, to fill the vacancy caused by the death of Mons. Barthelemy St. Hilaire, and the retiring directors at present are Mons. Desmarest, Mons. D. M. Messera, Mr. Hugh Brown, and Mons. Louis O. Schmidt.

### THE AUSTRALIAN GOLD RECOVERY CO., LTD.

The ordinary general meeting of the shareholders of this Company, Limited (MacArthur-Forrest Process), was held recently at the Cannon-street Hotel, E.C., under the presidency of Mr. Robert Smith, J.P. The chairman in the course of his speech said:—There is no doubt that the litigation in connection with the patents has materially interfered with the progress of our work throughout Australia; but it looks as if our troubles are nearing an end. As you are aware, the judgment of the Court of Appeal in England has materially strengthened our position, and we have taken steps to amend our patents on the lines therein indicated. We have already secured the amendment of our patents in Queensland, West Australia, South Australia, and Tasmania, and have lodged our applications for Victoria and New South Wales. Our position is further strengthened by the recent powerful American decision in connection with the Gold and Silver Extraction Company of America, which holds the kindred patents for the United States, and which I will now read to you:—"Substance of decree in case Gold and Silver Extraction Company of America, Limited, against Mercur Gold Mining and Milling Company, adjudged and decreed that letters patent to MacArthur-Forrest, May 14, 1889, for improvements in process of obtaining gold and silver from ore, and patent to MacArthur, December 24, 1889, for improvements in metallurgical filter, are good and valid; that plaintiff is entitled to exclusive right in and under said letters patent; that the entire title to said letters patent is vested in plaintiff; that defendant infringed said patents by using same conjointly, and that defendant be enjoined and restrained from using, directly or indirectly, said patents, or either of them, or any process or improvement similar to them or either of them, and from imitating same or either of them during the term of said letters patent. Court not in session until next Monday, when decree will be entered." A stronger decision than this could not have been invited, and you all know the weight which an American decision carries all over the world on patent questions.

### THE CHESHIRE SALT TRADE.

THE returns for the past month show that the shipments have been of anything but a satisfactory character, and the same may be said regarding the returns for the first quarter of the present year. This is apparently chiefly owing to the short shipments to the East Indies, and that none of the other markets have been brisk. The shipments for March amount to 27,050 tons, against 8,059 ten years ago. The average for the ten years has been 49,977 tons. During the three months in 1896, the shipments were 89,940 tons, against 104,057 in 1895, which was the smallest amount in the previous ten years, for in 1887 the figures were 200,940 tons. The shipments last month from Liverpool were 20,705; Runcorn and Ship Canal, 3,630; and Weston Point, 2,712; total, 27,050. The tonnage of rock salt from the same ports was—Liverpool 2,861, Runcorn and the Ship Canal 173, and Weston Point 590; total, 3,624 tons. The upper Mersey ports have shipped more than last year, the Ship Canal having furnished several good-sized vessels for America.

RECENT CONTRACTS.—The following tenders have been accepted by the Barrow-in-Furness Corporation, for the gas department:—Wrought iron tubes and fittings, Messrs. Lloyd and Lloyd; brasswork, Messrs. J. Russell and Co., Limited; main pipes, the Stanton Iron-works Company, Limited; sulphuric acid Messrs. J. Riley and Sons, Limited; lime, the Craven Lime Company, Limited.



## Our Book Shelf.

**PETROLEUM.** By Herberton Redwood and G. T. Holloway. 2 vols., 1000 pp., including index, numerous illustrations, maps, and plates. London: Charles Griffin and Co., Ltd. 1896. 45s.

This voluminous and excellently got up work deals with the geological occurrence and geographical distribution of petroleum, its physical and chemical properties, uses, and in short with petroleum and all petroleum products of all kinds.

The first volume deals most exhaustively with the occurrence and distribution of the oil and oil gas, and describes the conditions peculiar to all the countries where these two are found. The physical and chemical properties and theory of origin are then dealt with, after which is given a detailed and most interesting account of the various methods of being set on as practised in the States, Canada, Russia, Galicia, and elsewhere. The refining of petroleum next receives attention, and it is here that the hopes raised by the extensive treatment of the preceding sections are disappointed. Out of the 400 and odd pages in the volume there are but 12, and 12 only, devoted to the subject of petroleum refining in that greatest centre of this industry—the United States. The introductory section, which has been so interestingly expounded in the earlier sections, is virtually condensed down to the statement that “The refining of petroleum in the United States is monopolized by the Standard Oil Co., who own a considerable number of refineries.”

The second volume opens with a description of the Scotch and English oil industries. Section viii. is an important one, as it deals with transport, storage, and distribution. The chief American oil states are described individually, but the opening portion of this section is very deficient in detail. The great Tide-water pipe line and its exciting history is disposed of in less than three lines. The extension of the independent United States (Emery) line to Wilkesbarre is recorded, but nothing is said concerning the extent of its extension, while the almost startling step made by “one of the lines” (it was the same independent Emery line) by being refined instead of crude is related in a dozen words. The descriptions of the methods of testing petroleum are good, and the account of the various flashpoint apparatus is not only most complete but very interesting. Under the heading of lamp accidents there is nothing new, and much that is more than debatable; in fact this section is almost word for word the same as that written by the author and published last year in another well-known work on chemical technology. It is most surprising that such an authority should continue to repeat some of the statements in this section. The book concludes with a summary of the petroleum laws, which will be found very useful for reference. For the United States, however, better information can be obtained from a very similar, but in some points more comprehensive, compilation of the American laws that has recently been published. The work is splendidly got up, excellently illustrated, and affords a valuable review of the petroleum industry as a whole; but we regret that a careful study of the work reveals the fact that, although full of information about the Russian, Galician, French, and other industries, there is little if anything fresh to be learned about the oil industry in America—the centre of production.

**BLEACHING AND CALICO PRINTING.** By G. Duerr, assisted by W. Turnbull. 142 pp. and index, with diagrams and over 100 dyed and printed patterns. London: Chas. Griffin and Co., Limited. 1896. 12s. 6d.

This book (though virtually the text of a course of lectures delivered by the author to a class of students) is in no wise what may be politely termed an examination handbook. It is essentially a practical work describing technically all the processes of bleaching, printing, mordanting, and dyeing, as well as dealing with the kindred subjects of mineral and coal-tar colours, thickeners, and the properties and testing of the oils, soaps, and solvents used in these industries. The work abounds in recipes and formulæ, and in this connection chapter iv., on styles of calico printing, calls for special comment, while the same may be said of chapter xii.

The method given for testing bleach in conjunction with the sections on the testing of water, soaps, and glycerine leave room for improvement, as in a technical work of this kind it is desirable that such matters should either be dealt with more fully and technically, or else be disposed of wholesale by reference to standard and technological works wherein these questions are ably handled. This protest, however, should not detract from the excellency of the work in general, which is essentially devoted to the bleaching and textile printing industries, as a first guide and help to the mastery of which it would be hard to find a better. There should soon be an opportunity for amending any small defects in a second edition.

## THE USE AND PREPARATION OF BORDELAISE MIXTURE.

THE mixture composed of sulphate of copper, lime, and water generally known under the name of “Bouillie Bordelaise” has for some time already been employed as a preventive against mildew and other cryptogamic diseases of the vines in France and other countries, has of late years begun to be used for combating these diseases amongst other plants and among vegetables, and it is now employed very generally as a preventive against the pernicious and often very calamitous potato disease in many parts of the world.

Though many persons, therefore, in the United Kingdom doubtless already acquainted with the composition and preparation of the “Bouillie Bordelaise,” there may still be a number to whom the following remarks may be of use; and observations regarding an improved “Bouillie Bordelaise,” recommended to be employed in exceptionally serious instances of cryptogamic maladies, may be of some interest to all classes engaged in agriculture.

The following is the composition of the “Bouillie Bordelaise” used now in the Bordeaux district (and as recommended by the national Viticultural Congress held at Rome, 1889, and competent authorities):—

|                          | French<br>Weights and<br>Measures. | English<br>Weights and<br>Measures. |
|--------------------------|------------------------------------|-------------------------------------|
|                          | Kilograms.                         | Lb.                                 |
| Sulphate of copper ..... | 1.500                              | 3                                   |
| Lime .....               | 0.500                              | 1                                   |
|                          | Litres.                            | Gall.                               |
| Water .....              | 100                                | 2                                   |

The general directions for preparing the “Bouillie Bordelaise” follows, viz.:—

The requisite quantity of water should be poured into a tub or other suitable receptacle (e.g., an old cask standing upright) it should be placed the sack or basket containing the quantity of sulphate of copper, in such a way as to immerse entirely in the water; after immersion, during about two hours sulphate of copper will be found to be dissolved.

In another receptacle (this is essential), made of wood, should be placed the requisite quantity of lime, and upon it a proportion of water should be poured, gradually tempering it, obtain a fairly thick lime-wash. Care should be taken to lumps and pieces; and the small stones and other impurities choke up the implements of aspersion) should be taken out.

This lime-wash should, thereupon, be poured slowly solution of the sulphate of copper, the mixture being stirred time to time with a bundle of small well-cleaned wooden sticks being taken that no part of these sticks (bark, etc.) shall fall into the mixture.

In this way a clear “Bouillie” of a fine blue colour obtained which, after being left to settle, will deposit a bluish sediment at the bottom of the receptacle; but every time that it is used (i.e., that the implements of aspersion are filled with it) the sediment should previously be thoroughly stirred up again.

It should be noted that whenever the said “Bouillie,” being blue is of a greyish colour, the reason is that the preceding operations have not been properly carried out, but that the lime dissolved in water taken from the receptacle used for dissolving sulphate of copper; and in such case the “Bouillie” should be used, as it is good for nothing.

The “Bouillie Bordelaise,” prepared according to the above directions, should be applied, if possible, in fine weather, but there be danger of mildew, &c., appearing, then the mixture should be applied without loss of time, that is to say, without waiting for weather.

The best implements of aspersion for sprinkling the “Bouillie” upon the leaves of the plants are those which throw the spray in strong jets (from above) in the minutest possible most numerous possible drops, so that the mixture may fall foliage like a fine but dense shower of rain. For it must be remembered that only those parts of the leaves are impervious to cryptogamic diseases which are touched by the mixture.

Inasmuch as the efficacy of the treatment of the plants with “Bouillie Bordelaise” depends, to a great degree, upon the quality of the sulphate of copper used in its preparation (in which respect it may be observed, the maximum amount of impurities not exceed five per cent.), it is advisable, before using it, to test the quality of the sulphate of copper in the following manner:—Dissolve a small sample into powder, a minute portion of which should be dissolved in a tumbler of pure water, and to this added a few drops of ammonia. If the sulphate of copper is



will be perfectly clear, and of a fine blue colour. (It may, however, be observed that, inasmuch as sulphate of copper, as sold in trade, is absolutely pure, the addition of the ammonia generally produces a slight cloudiness at first, but this may be regarded as of no account.) If, on the other hand, the sample of sulphate of copper contains sulphate of iron, as is sometimes the case, then the solution made above mentioned will at first assume a muddy, dark blue colour, but gradually become clearer; eventually, a flaky greenish-black precipitate will be deposited at the bottom of the tumbler, and the liquid above the same will assume the fine blue colour of pure sulphate of copper. In such case the sulphate of copper should not be used in the preparation of the "Bouillie Bordelaise," for it would not possess the qualities requisite for destroying the germs of cryptogamic diseases. Though the valuable utility of the "Bouillie Bordelaise" and its use, when judiciously applied, is now generally acknowledged, it is, nevertheless, to have been found by some prominent agriculturists in France that, when the invasions of mildew and similar diseases are of an unusually virulent character, the preventative use of the mixture as prepared at present (in the above described form) is not of a sufficiently vigorous nature for such exceptional cases.

According to a communication lately made to the Agricultural Society of France by Mr. Michael Perret, one of its leading members, the use of this limited efficacy must be ascribed to the fact that the mixture is applied to the vines or other plants in the form of an almost insoluble precipitate of oxide of copper, and that it is, accordingly, unable to act very slowly in consequence of its restricted solubility. Could the solubility of the oxide of copper be enhanced by increasing the proportion of sulphate of copper now used in preparing "Bouillie Bordelaise," as described above.

Hereto, observes Mr. Michael Perret, the augmentation of the active action of the oxide of copper has, it is true, been attained, to a certain extent, by the addition of acids or of ammonia. But, though only these substances have had the effect of dissolving the oxide of copper, the chemical compounds obtained by such process have, it is to be noted, the serious disadvantage of destroying a portion of the delicate tissue, and especially that of the tender young leaves, to which the same may be applied.

It must, therefore, be considered highly desirable that a substance should be found which, while acting as a thorough solvent, causes no damage to the plants; and Mr. Michael Perret asserts that the substance fulfilling both of these conditions is *sugar*, the salt in which the (when used in the "Bouillie Bordelaise") forms a component part, being a double saccharate of copper and of lime. This salt is formed by mixing saccharate of lime with sulphate of copper, the reaction being facilitated by a two-fold decomposition, viz.: By the sugar acting with the copper and the sulphuric acid with the lime. In the process the sulphate of lime falls as a precipitate, whilst the saccharate of copper appears as a bluish-green liquid, which will be found to contain about 50 per cent. of the copper, the other half being combined with the sulphate of lime.

When applied to the plants, this solution of copper (mixed with the saccharate of lime) will be found to exercise an immediate action upon the leaves; whilst a slower, that is to say, continuous action, will be exerted by the precipitate which remains upon the plants. For it has been found (according to Mr. M. Perret's statement) that this "Bouillie Bordelaise" is a very adhesive mixture, and when applied upon the plants is able to resist the effects of rain, owing to some peculiar quality of saccharates, or (what Mr. Perret is more probable) to the fact that the copper, being able to penetrate the tissue of the leaves, is thus protected from the action of rain. Whatever may be the reason, it has at all events been proved, by conclusive experiments made by Mr. Aimé Girard, a well-known French chemist, that the almost entire quantity of the copper contained in the "Bouillie Bordelaise Sucrée," made according to the directions of Mr. Michael Perret, has been found upon the plants upon which the mixture has been sprinkled in a judicious manner.

Mr. M. Perret states that he has now, for many years, exclusively employed this sweetened mixture, and with it has fully succeeded in eradicating all cryptogamic diseases amongst vines, vegetables, etc., without in any way injuring the plants in question. This "Bouillie Bordelaise Sucrée" may be applied with equally good results to potatoes as to vines and other plants; and it is more particularly in the case of its application as a remedy against the potato disease that the adhesive properties of this mixture have been fully established, as above described.

It must, however, be observed that the preparation of the "Bouillie Bordelaise Sucrée," of the double saccharate of copper and of lime, above mentioned, is a somewhat delicate matter. For, on the one hand, it is essential that the proportion of the several ingredients composing the mixture must be very exactly maintained; on the other hand, the materials to be used for it frequently vary in quality or composition, and the lime is often more or less calcined, and the limestone from which it is taken more or less pure.

In order to overcome these difficulties, Mr. Michel Perret gives the following directions for the preparation of the "Bouillie Bordelaise Sucrée," viz. —

A mixture, consisting of 2 kilos. (4 lbs.) of ordinary molasses—as can be obtained in sugar refineries—and of 2 kilos. (4 lbs.) of lime, in the form of paste, of a maximum hydration, to be boiled and stirred, and then poured out upon a level surface. When cooled and solidified, this mixture, which will have the appearance of solid varnish, should be left to dry, and then be reduced to powder. When in the latter form it should be mixed with 1 kilo. (2 lbs.) of powdered sulphate of copper. Three kilos. (6 lbs.) of this powdered mixture, mixed with 100 litres (22 gallons) of water, constitute the "Bouillie Bordelaise Sucrée."

It may be added that Mr. Michel Perret offers to sell sample bags of the above described powder, prepared by him (at about 16s. per bag of 24 lbs.) for trying the efficacy of his remedy; and he states that three aspersions made with this mixture (the first at the commencement of vegetation) ought to suffice towards protecting the plants against the most virulent invasion of cryptogamic diseases.

### IMPORTS AND EXPORTS FOR MARCH.

AS a whole the Board of Trade returns for the past month show a satisfactory improvement in trade. Certain individual articles of interest to the chemical trade do not appear to share in the general betterment. In the imports petroleum and turpentine are much reduced both in quantity and value. The quantities of paraffin, rosin, and tallow were less, but of india-rubber and nitrate of soda more. In exports, alkali and salt still show a falling off.

#### IMPORTS OF FOREIGN AND COLONIAL PRODUCE.

| ARTICLES.                  | Quantities.      |            |
|----------------------------|------------------|------------|
|                            | 1895.            | 1896.      |
| Margarine .....            | Cwt. 80,093      | 88,696     |
| Copper Ore and Regul. .... | Tons. 13,480     | 10,370     |
| Pyrites .....              | " 51,924         | 56,959     |
| Tin .....                  | Cwt. 61,651      | 73,175     |
| Alkali .....               | " 8,737          | 17,100     |
| Brimstone .....            | " 46,360         | 15,036     |
| Dyes, Coal Tar .....       | £. 63,201        | 62,123     |
| Saltpetre .....            | Cwt. 13,706      | 30,490     |
| Petroleum .....            | Gall. 18,801,423 | 10,554,270 |
| Turpentine .....           | Cwt. 47,183      | 858        |
| Guano .....                | Tons. 4,545      | 1,993      |
| Nitrate of Soda .....      | " 12,788         | 26,057     |
| Paraffin .....             | " 77,008         | 51,393     |
| Rosin .....                | Cwt. 216,397     | 116,723    |
| Tallow and Stearine .....  | " 322,697        | 289,934    |
| Oil Seed Cake .....        | Tons. 25,774     | 22,027     |
| Wood Pulp .....            | " 19,066         | 19,575     |

#### EXPORTS OF BRITISH AND IRISH MANUFACTURES.

| ARTICLES.               | Quantities.   |           |
|-------------------------|---------------|-----------|
|                         | 1895.         | 1896.     |
| Alkali .....            | Cwt. 563,948  | 449,030   |
| Cement .....            | Tons. 28,616  | 30,552    |
| Coal and Coke .....     | " 2,464,913   | 2,472,707 |
| Copper, all kinds ..... | Cwt. 108,010  | 109,428   |
| Iron and Steel .....    | Tons. 205,707 | 263,341   |
| Chemical Manures .....  | " 26,723      | 40,893    |
| Oils, seed .....        | " 4,603       | 4,869     |
| Salt .....              | " 45,104      | 33,587    |

**GOLD OUTPUT IN THE RAND**—Owing to the split in the Chamber of Mines, there has been some difficulty in ascertaining the actual total for March. It now appears that the return given by the old Chamber was wrong by about 5,000 ounces, as the production of the mines in the new Chamber was only estimated. Thus while the March total is now returned by the old Chamber of Mines as 147,015 ounces. The new Chamber, consisting of Langlaagte Estate, Block B, Van Ryn, George Goch, Meyer and Charlton, Princess Estate, and United Main Reef, returns 26,937 ounces, making the total for the month 173,952 ounces, as compared with the first estimated total of 179,153 ounces. The formation of the new Chamber arises out of the opposition to leading groups here by Robinson and a section of the German group. Of the total number of companies which have joined the new Chamber (26) only seven are producers. The old Chamber comprises the remainder of the industry.



### THE MERSEY SALT SHIPMENTS.

THE monthly and quarterly return of salt shipments from the Mersey, issued by Mr. H. E. Falk, is, on the whole, not of a very encouraging description. The return shows that trade is dull, and shipments for March have been somewhat disappointing. To particularise it may be pointed out that there is an enormous falling off in the export to the East generally. The shipments to Calcutta, for instance, were 3,634 tons in March, compared with 13,582 tons in March, 1895, while for the first three months of the year the figures are 12,977 tons, against 24,894 tons in the first quarter of 1895. The falling off in the March shipments to Burmah are proportionately large, being 606 tons, compared with 3,081 tons in March last year. The quarter's returns are somewhat better, being 2,706 tons in the first quarter, against 3,916 tons to March, 1895. Decreases are shown in the March shipments to Australasia, Africa, the West Indies, to Europe generally, and to the other ports of the United Kingdom, while increases, such as they are, are shown to the United States, Central and South America, and to British North America, the figures in this last-named instance being very satisfactory, both for March and for the whole of the quarter. Decreases on the quarter's shipments, compared with the first three months of 1895, are shown to the United States, Asia (as already pointed out), and Australasia, whilst increases are shown to the West Indies, Central and South America, Africa, Europe, and to the other ports of the United Kingdom. The total shipments from Liverpool in March amounted to 23,547 tons, against 35,093 in March, 1895, and for the past quarter to 60,053 tons, compared with 67,631 tons in the first three months of 1895. The shipments from Runcorn and Weston have materially increased, being 6,989 tons last month, against 5,285 in March, 1895, and 12,539 tons for the past quarter, compared with 6,410 tons last year. The total shipments of salt from the Mersey therefore were 30,536 tons last month, compared with 40,378 tons, and for the quarter 72,592 tons, against 74,041 tons.

### THE SICILIAN SULPHUR INDUSTRY.

THE measures proposed by the Italian Government for the relief of the sulphur industry of Sicily lend interest to a report by the United States Consul at Catania, on the present condition of the Sicilian sulphur mines and miners. The industry is now in a deplorable state, owing to overproduction and low prices. Numerous conferences have been held in different towns in the island to devise remedies, but so far without result. The last suggestion was to form a kind of sulphur union of all the mines, which should regulate the production and export. The Consul, however, does not see how the production can be reduced; for the mines must be worked if only to keep out the water, which accumulates rapidly and would soon ruin them. Moreover, there is a great need of money amongst the mine owners. The proposition which appears to have found favour with the Government has been the establishment at the ports of warehouses, where certificates should be issued for the sulphur deposited, which certificates might be discounted by the banks. In addition, a reduction of the export duty, which amounts to about 8s. 6d. per ton is asked. The price of sulphur has fluctuated considerably, that for "best thirds unmixt" having been as follows in the respective years per ton:—1876, 120 lire (lire=9½); 1879, 97 41; 1884, 89; 1886, 76 20; 1891, 115 59; 1895, 55 lire. The wages of the miners have necessarily gone down with the prices, so that now they have fallen to 3½d., 4d., and at most 5d. per day. For many years the quantities mined have largely exceeded those exported, and in 1894 and 1895 the excess was over 300,000 tons. The report of great sulphur deposits having been found in Louisiana, and of plans for working them, has naturally added to the depression in Sicily. So backward is the industry in other respects that the fusing of the sulphur in the primitive furnaces can only be done at certain times of the year after harvesting the crops, which would be ruined by the fumes. The modern works at Catania can, of course, continue all the year round.

**MINERAL OIL INQUIRY.**—The committee of inquiry upon the petroleum laws met again on Wednesday, under the chairmanship of Mr. A. J. Mundella, M.P. Mr. Alfred Spencer, of the London County Council, gave evidence showing that in the great proportion of lamp accidents the reservoirs were broken and the oil escaped and ignited, and in no fewer than 443 cases the reservoirs consisted of glass and china, and in only eight of metal. In 196 cases the lamps had exploded. In every one of these cases it was found that a channel of communication existed between the reservoir and the flame. In only 200 cases out of 876 accidents had it been possible to ascertain the nature of the oil used, and in comparatively few cases only had it been possible to obtain samples. In his opinion very few of the accidents would have occurred if any very high test oil had been burning in the lamps.

### NOTICES.

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Owing to the inconvenience created by the various ways in which foreign subscriptions are remitted, we respectfully beg to inform subscribers that a *Crossed MONEY ORDER* is the most satisfactory method of remitting, both for them and ourselves. In the case of a Money Order, a letter advising us of same should always be sent, otherwise, owing to post-office formalities, much delay in tracing and acknowledging foreign remittances is inevitably entailed in this country.

### Market Reports.

#### TAR AND AMMONIA PRODUCTS.

Benzol is easier, and not moving very well at the reduction, 90's now being quoted 2s. and 50/90's 1s. 8d. For July-December delivery 90's are quoted 1s. 10d. There is practically no change in the other products. Crude carbolic acid is perhaps a shade easier, but the difference is hardly quotable. Crystals (40%) remain at 8d. Solvent naphtha steady at 1s. 3d., and crude at 9d. Pitch is quiet at 33s. f.o.b. East Coast.

Sulphate of ammonia continues to droop. Owing to the absence of large buying for April delivery, makers are anxious to be clearing off their stocks, and prices therefore are again lower. Beckton is quoted £8., London outside makes £8., Liverpool £7. 17s. 6d., Hull £7. 16s. 3d., and Leith £7. 15s. to £7. 16s. 3d.

#### LIVERPOOL MINERAL MARKET.

The market this week has been brisk. Manganese arrivals continue very limited, and these are sold for forward delivery, hence stocks in the meantime have been so drawn upon that they are practically nil; prices are considerably firmer for both prompt and forward delivery. Ground manganese is in increasing demand at higher prices on account of the scarcity of the raw material, viz., £8., £10., £12., and £15 per ton, according to quality. Manganiferous iron ore: Though arriving freely, prices are improving. Chrome ore: Arrivals have been larger, but prices are steady without any material alteration. Bauxite is in good request, and sells freely at 20s. for first, 16s. for second, and 12s. for third quality, f.o.b. French chalk: Notwithstanding unusually heavy arrivals the demand continues good, and prices are unaltered—"Angel White" brands are in special request at 65s. to 70s., 80s. to 90s., and 100s. to 110s. per ton, according to grade. Wolfram and scheelite: There are no arrivals to report, whilst stocks are considerably reduced, and prices are very much firmer. Ferro-tungsten and ferro-chromium are in good demand at last quotations. Arsenic: The production is very limited, and the demand is strong; prices are therefore advancing by leaps and bounds—£27. to £30. per ton now being quoted. Fuller's earth is steady at 50s. for lump, 55s. for ground, and 75s. per ton for impalpable powder, "Emerald," and other brands. Ochres and umbers are in steady demand without alteration in price. Antifriction ore is unaltered. Pumice-stone: There is more inquiry for lump, very fine Teneriffe lump being done at £7. 10s. per ton, and Italian at £10. 10s. per ton. Keiselguhr is in good demand, and brings full prices. Asbestos and mica steady, high-class qualities are being inquired for. Bog ore: Stocks are low, and as the shipping season has not yet commenced, prices are firmer at 20s. to 25s. per ton. Magnesite sells slowly at somewhat lower prices. Plumbago: Founders' and lubricating qualities are in good demand at £6. 10s. to £10. per ton; prime Ceylon being done at £15. to £20. per ton, according to grade. Carbonate and sulphate of barytes: There is more offering at somewhat lower figures. Molybdenite, cerite, euxenite, orthite, etc., meet with a quiet demand.

#### MISCELLANEOUS CHEMICAL MARKET.

There is little change to report in the general condition of the market in regard to alkalis. A fairly steady business is being done in all the main products, both for export and home trade, and prices are on the whole steady. Caustic soda remains at figures given last week.



o.b. Liverpool, 77%, £9. 7s. 6d.; 74%, £8. 7s. 6d.; 70%, 6d.; 60%, £6. 7s. 6d. per ton, 10-ton lots and upwards. Soda alkali, 58%, £3. 7s. 6d., bags, f.o.b. makers' works. Soda 35s. per ton, bags. Leblanc ash, 1d. to 1½d. per degree, f.o.b. Bleaching powder steady at £6. 17s. 6d. to £7. 2s. 6d., and £7. 5s. hardwoods, f.o.b. For some markets special concession has been made. Chlorate of potash 4½d., d. per lb. Sulphate of copper is steady in price, at £17. 10s. 15s., according to make. Saltcake generally firm, at 22s. works, Lancashire and Cheshire, and higher prices in other

For potash, caustic and carbonate, the demand continues and prices are firm. Brown acetate of lime still offering at low prices, owing to pressure of stocks upon the markets. Estates generally are quiet. Acetic acid has a tendency to little in price. In nitrate of soda the market is steady, at 8s.

White powdered arsenic is still deficient in supply, and ruling from £23. to £24., according to time of delivery. Salt and oil are weak in price. For carbolic crystals the market is easier. This is looked upon as only temporary. There is a demand for green coppers, and with the increased scarcity is firmer in all districts. Prussiate of potash weak, at 7¼d. per lb. Cyanide, 1s. 2½d. to 1s. 3d. per lb. Sulphocyanides quiet, and prices steady. Muriate of ammonia rather easier, 6s. to £22. For chemicals generally there is as yet no marked

### REPORT ON MANURE MATERIAL.

market continues quiet, but there has been a fair amount of done for prompt and early delivery. The quotation for Florida phosphate rock remains at 6d. per unit, in cargoes c.i.f. Kingdom ports, and that for South Carolina River rock at 5½d. 1896 steamer shipment. There is no business to report in bone bones, but £3. 17s. 6d. per ton would no doubt be for summer-autumn shipment. For Bombay bone meal the market is rather easier. On spot, £3. 17s. 6d. would be accepted, except for shipment there are sellers at £3. 15s. Sellers ask £4. for crushed Kurrachee bones on spot, but do not find at the price. Quotation for shipment is £3. 17s. 6d.

Nitrate of soda remains firm, at 8s. per cwt. for fine quality. Due cargoes ordinary quality are worth about 7s. 10½d., per-autumn shipment 8s. 3d. to 8s. 4½d. per cwt. Home-dried blood offers at 7s. 6d. per unit, free on rails at works.

### WEST OF SCOTLAND CHEMICALS.

GLASGOW, TUESDAY.

are no signs of recovery in sulphate of ammonia as yet, but reverse in this part of the market. The present procurable is at above £7. 17s. 6d., at which a few transactions continue to go through, but buyers are not at all eager. It seems that at parcel was sold at £7. 16s. 3d., but that was, on the part of going lower perhaps than need be, so far at least as last is concerned. Forward business is not so much as hinted at. Chemicals market shows moderate signs of improvement, not as yet to the extent of any rise worth mentioning. Chlorate is firmer a little, and the feeling in soda ash, soda crystals, is a bettering one, without positive change of value. Oversea inquiry is being felt beneficially. In mineral oils there is increased call for lubricants, the prices of which are well

prices current are:—Soda crystals, £2. 2s. 6d., nett, Tyne; 48/56°, £3. 15s. to £4. 15s. nett, Tyne; white alkali, 4. 10s. to £5. nett, Tyne; alum in lump, £5. to £5. 5s. nett; caustic soda, white, 74° £8. 7s. 6d., 70/72° £7. 7s. 6d., 60/62° £6. 7s. 6d., and cream 60/62° £6. 7s. 6d., all nett, Liverpool; bleaching £7. nett, Tyne; saltcake, 23s.; borax, English, £20., and boracic acid, £30. nett, Glasgow; bicarbonate of wt. casks, £6. 10s., and 1-cwt. casks £6. 15s. nett, Liverpool; te of potash, 4½d. nett, for Scotch and English deliveries (for ¼d. nett, f.o.b. Glasgow); bichromate of soda, 3¼d. nett, for and English deliveries (for export, 3½d. nett, f.o.b. Glasgow); of potash, 5d. less 5%, Liverpool; nitrate of soda, 8s. to 8s. 3d.; of ammonia, £7. 16s. 3d. to £7. 17s. 6d. prompt, f.o.b. Leith; niax, first and second white, £39. and £37. nett, any port; of copper, £8. 10s. less 5%, Liverpool; paraffin rd, 1½d. and soft, 1½d. to 1½d. per lb.; paraffin wax, 120° red, 2½d. to 2½d.; paraffin spirit (naphtha), 7d. per paraffin oil (burning) No. 1, 6½d., and crystal, 6¼d., at works, buyers (English sales about ½d. lower); ditto (lubricating)

865° £5., 885° £5. 10s. to £6., and 890/895° £6. to £6. 10s. Week's imports of sugar at Greenock were 26,000 bags cane, and 3,640 bags beet, all unrefined.

### THE METAL MARKETS.

LONDON, WEDNESDAY.—Pig iron, dull: Scotch warrants closed at 46s. 5d.; Middlesbrough, 38s. 1d. cash, and hematite, 48s. 3d. Copper, steady: Chili bars, G. O. B.'s and G. M. B.'s, closed at £44. 11s. 3d. to £44. 16s. 3d. cash, and £44. 16s. 3d. to £45. 1s. 3d. three months. Tin, easier: Straits closed at £59. to £59. 10s. cash, and £59. 12s. 6d. to £60. 2s. 6d. three months; Australian, £60. English ingots, £63. 5s. Lead, quiet: Spanish, £10. 18s. 9d. to £11.; English, £11. 2s. 6d. to £11. 3s. 9d.; Silesian spelter, ordinary, £15. 12s. 6d. Nickel, 1s. 2½d. Antimony, £30. to £30. 10s. Quicksilver, quiet: first hands, £6. 17s. 6d.; second hands, £6. 16s. 6d. Copper shares, steady: Cape, 2½ to 2½; Copiapo, 1½ to 2½; Libiola, 2½ to 1½; Mason and Barry, 3 to 3¼; Rio Tinto, 18½ to 18½; Tharsis, 5½ to 5½.

GLASGOW, WEDNESDAY.—Market firmer, with small business. Scotch done at 46s. 5d. and 46s. 5½d. cash, also at 46s. 7d. one month; closing with buyers at 46s. 5d. cash, sellers ask 46s. 5½d. Cleveland done at 38s. 1d. cash; closing with buyers at 38s. 1d. cash, sellers ask 38s. 2d. Cumberland hematite done at 48s. 2d. and 48s. 3d. cash; closing with buyers at 48s. 3d. cash, sellers ask 48s. 3½d. Middlesbrough hematite done at 45s. 9d. cash, also at 45s. 11d. one month; closing with buyers at 45s. 9d. cash, sellers ask 45s. 10d.

### LIVERPOOL OIL AND COLOUR MARKET.

WEDNESDAY.

OILS.—Palm oil is decidedly weak, and sales are being made at a reduction to £18. 17s. 6d. transit, and £18. 15s. forward. Olive is steady and firm, there being a decent business doing at £28. to £35. per tun. Linseed is unaltered, Liverpool makes still being quoted 19s. 9d. to 21s. per cwt., according to quality. Cottonseed is steady, and keeps much the same in price, with Liverpool refined at 17s. to 17s. 6d. per cwt., in export barrels. Castor oil is rather quiet at 2½ to 2½d. for good seconds Calcutta, and first pressure French 2½d. to 2½d. per lb. There is no change in the price of tallow, and the market is dull. Resin is only offered in small quantities, so that while the demand is steady prices are fully maintained. Spirits of turpentine are considerably dearer owing to scarcity, and now stand at 21s. 9d. per cwt. for immediate delivery. Petroleum is firm, with American at 6½d. to 7½d., and Russian refined 5½d. per gallon.

COLOURS are steady, without alteration in prices. Ochres: Oxfordshire, common, £10., medium, £12., best, £15. Derbyshire, common, 40s.; medium, 50s., best, 60s.; Welsh, best, 90s., seconds, 50s., and common, 18s.; Irish, Devonshire, 40s. to 45s.; French, J.C., 60s. to 65s.; M.C., 65s. to 67s. 6d. Umber: Turkish quiet; Devonshire, 50s. to 55s. White lead, £16. Red lead unchanged. Venetian red, £6. to £10. Cobalt: Prepared oxide, 9s. 9d.; black, 9s.; blue, 6s. Zaffres: No. 1, 3s. 6d.; No. 2, 2s. 6d. Oxide of iron: Common, £7.; medium, £10.; finest, £20. Zinc oxide, £22. 10s. to £25.

### TYNE CHEMICAL REPORT.

TUESDAY.

There is no change to report in the market for chemicals, and there is very little improvement in the demand. Soda crystals, £2. 2s. 6d. per ton, gross weight, locally. Caustic, 76/77%, £9. 5s. per ton; 70%, £7. 10s. to £7. 15s. per ton. Sulphur, £3. 17s. 6d. per ton.

Bleaching powder, 50s., £7. 5s. per ton, nett; nards, £7. 10s. per ton, nett; caustic soda, 76/77%, £9. 5s. per ton, nett; do., 70%, £7. 15s. per ton, nett; recovered sulphur, 2 cwt. bags, £3. 17s. 6d. per ton, nett; soda ash, 48%, £4. per ton, nett; do., 50%, £4. 3s. 4d. per ton, nett; do., 52%, £4. 6s. 8d. per ton, nett; alkali, 36%, £2. 15s. per ton, nett; white alkali, 48%, £4. 10s. per ton, nett; do., 50%, £4. 15s. per ton, nett; do., 52%, £5. per ton, nett; hyposulphite of soda, 5-7 cwt. casks, £6. 5s. per ton, nett; do., 1 cwt. kegs, £7. per ton, nett; silicate of soda, 75° Tw., £2. 12s. 6d. per ton, nett; do., 100° Tw., £3. per ton, nett; do., 140° Tw., £3. 7s. 6d. per ton, nett; soda crystals, casks, £2. 2s. 6d. per ton, gross weight; do., 2 cwt. bags, £2. 2s. 6d. per ton, nett weight; chlorate of potash, 5d. per lb., less 6%; pearl hardening, £3. per ton, nett; pure white sulphate of alumina, £3. 17s. 6d. per ton, nett; blanc fixe, £7. 5s. per ton, nett; chloride of barium, refined crystals, £6. 15s., per ton, nett; do., 90/95%, crude calcined, £6. per ton, nett; sulphide of barium, crystals, £4. 15s. per ton, nett; carbonate of alumina, £30. per ton, nett; aluminate of soda, £30. per ton, nett.

SALT.—South Durham steady, at 9s. per ton, f.o.b. Tees.



**COALS.**—The coal trade has little to report. The shipping season now commencing is bringing in more orders. Prices generally continue very low:—Best Northumbrian steam, 7s. 6d. to 8s. 3d. per ton; second qualities, 6s. 6d. to 7s. 3d. per ton; small steam, 3s. 9d. to 4s. per ton; bunker coals, unselected, 6s. 3d. to 6s. 9d. per ton; gas coals, 7s. to 7s. 3d. per ton; household coals, 10s. to 10s. 6d.; coke, very firm, 14s. to 15s. per ton.

## HULL PAINT, OIL, AND COLOUR REPORT.

TUESDAY.

**OILS.**—The market price of oils since the holidays has shown some little improvement, both cotton and linseed oils having advanced during the year, compared with the same time a year ago, have been:—Linseed, 162,215 quarters, against 135,449 quarters; rapeseed, 14,119 quarters, against 25,822 quarters; cottonseed, 66,545 tons, against 72,120 tons; olive oil, 7,424 casks, against 3,337 casks; rape oil, 1,539 casks, against 3,802 casks; oil cakes, 5,710 tons, against 5,131 tons; tallow, 11,220 cwt., against 4,085 cwt.; bones, 3,404 tons, against 1,871 tons; turpentine, 6,220 barrels, against 3,148 barrels. Linseed oil has advanced about 7s. 6d. per ton, closing steady at 18s. naked, spot; month, 18s. to 18s. 1½d.; May-August, 18s. 6d.; and September-December, 18s. 7½d. Boiled and refined from £1. to £2. per ton extra. Export for the fortnight, 3,260 cwt. Refined cotton oil about 7s. 6d. per ton dearer on the spot, the closing quotation being about 15s. 1½d. naked; May-August, 15s. 7½d. to 15s. 9d.; casks £1. and barrels £1. 10s. per ton extra. Export of refined oil for the fortnight, 12,920 cwt. Turpentine, £1. 8s. 9d. per cwt. Cod oil, scarce, from £17. to £20. per ton. Olive oil quiet, and values have a tendency to fall still further. Castor oil, 2½d. per lb. for first pressure. Boiled siccative oil, £13. per ton. American cottonseed oil soap: 70% fatty matter is offered at £11. 5s. per ton, in barrels. Locomotive grease, £12. per ton.

**CAKES.**—Linseed cakes quiet, but steady: 95% pure, £6. to £6. 2s. 6d. per ton; Russians, £5. 17s. 6d.; Americans, £5. 5s. Oil cakes, £5. to £5. 2s. 6d. Cotton cakes are firm, but fresh orders scarce: Best makes, £3. 15s.; seconds, £3. 12s. 6d. Rape cakes unchanged.

**PAINTS.**—Orders are plentiful and makers busy. Prices are:—White and red leads unchanged, also oxide of zinc; dry mineral colours range from £3. 10s. to £8. per ton; venetian red, oxide of iron, yellow ochre, blue, black, etc., paints from £11. per ton; paint remover, £1. 5s. to £1. 10s. per cwt.

## New Companies.

**Bird and Son, Limited.**—CAPITAL, £80,000. in £10. shares. This company has been formed to acquire the business of Messrs. Bird and Son, of Glamorgan Works, East Moors, and Imperial Wharf, Cardiff, and to trade as oil importers and refiners, tar, resin, and ammonia distillers. The subscribers to the memorandum of association are:—R. Bird, Ellerslie, Cardiff, oil importer; Mrs. R. Bird, Ellerslie, Cardiff; C. H. Bird, 38, Newport-road, Cardiff, oil importer; Mrs. C. H. Bird, 38, Newport-road, Cardiff; F. G. Bird, 6, Fitzalan-place, Cardiff, oil importer; W. R. Bird, 46, The Parade, Cardiff, engineer; A. G. Bird, Ellerslie, Cardiff, engineer.

**"H. B." Linseed Oil Co., Limited.**—The following are the subscribers to the memorandum of association of this company, further particulars of which were given in last issue:—J. C. Howley, 30, Greenside-road, Shepherd's Bush, secretary; H. W. Smith, 1, Prospect-place, Long Ditton, chemist; R. C. Heath, Myton Grange, near Woolwich, solicitor; G. Miles, 34, Leppoc-road, Clapham, engineer; W. E. B. Blenkinsopp, Garden Wharf, Battersea, chemist; R. C. May, 1, Moorgate-place, E.C., solicitor; H. T. Smith, 22, Gre Winchester-street, E.C., accountant.

**New Cement Co., Limited.**—CAPITAL £16,500., in shares of £1 each. This company has been formed to manufacture, sell, and deal in cement, lime, plaster of Paris, whiting, &c. The subscribers to the memorandum of association are:—A. J. White, 6, Adam-street, Adelphi, gentleman; A. Hoare, 36, Palace Gardens Terrace, V., gentleman; A. Kennedy, 1, Clement's Inn, W.C., solicitor; W. Slark, 6, Searle-street, Lincoln's Inn, solicitor; J. Lee, 78, Warwick Gardens, Kensington, C.A.; W. MacBurnett, 7, Arundell-street, Piccadilly, solicitor; J. W. Pickering, 96, Guildford-street, W.C., clerk.

## IMPORTS OF CHEMICAL PRODUCTS

AT

### THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

#### LONDON.

Week ending April 4th.

|                            |                        |  |
|----------------------------|------------------------|--|
| <b>Acetic Acid</b> —       |                        |  |
| Holland, 137 pks.          | Little & Johnston      |  |
| " 59                       | Phillips & Graves      |  |
| <b>Acetone</b> —           |                        |  |
| Holland, 6 cs.             | G. Rahn & Co.          |  |
| " 2 cs.                    | Phillips & Graves      |  |
| " "                        | Becker & Wagner        |  |
| <b>Alkali</b> —            |                        |  |
| France, 60 c.              | J. Barber & Co.        |  |
| <b>Alum</b> —              |                        |  |
| Germany, 10 cks.           | T. H. Lee              |  |
| Holland, 3                 | W. Burton & Sons       |  |
| " 46                       | R. W. Greeff & Co.     |  |
| " 62                       | H. Wallace & Co.       |  |
| <b>Alumina</b> —           |                        |  |
| Holland, 30 cks.           | H. Wallace & Co.       |  |
| <b>Ammonia</b> —           |                        |  |
| Holland, 3 bbls.           | Little & Johnston      |  |
| <b>Ammonium Chloride</b> — |                        |  |
| Holland, 19 cks.           | H. Lorenz              |  |
| <b>Antimony</b> —          |                        |  |
| Portugal, 50 t.            | J. Bamber              |  |
| <b>Arachide Oil</b> —      |                        |  |
| Holland, 10 cks.           | C. S. Lovell           |  |
| <b>Asbestos</b> —          |                        |  |
| Italy, 428                 | Walker, Nutter & Co.   |  |
| Germany, 22                | Craven & Co.           |  |
| Italy, 395                 | Pickford & Co.         |  |
| " 6                        | London Asbestos Co.    |  |
| " 237                      | J. Barber & Co.        |  |
| Germany, 25                | T. H. Lee              |  |
| Italy, 345                 | Brit. Asbestos Co.     |  |
| " 620                      | Bender & Martiny       |  |
| <b>Barytes</b> —           |                        |  |
| Holland, 42 cks.           | J. Kitchen. Ld.        |  |
| " 71                       | 150 bgs. Burrell & Co. |  |
| Belgium, 200               | "                      |  |
| Holland, 152               | D. Storer & Sons       |  |
| Germany, 200               | Burrell & Co.          |  |
| " 23 bbls.                 | O'Hara & Hoar          |  |

|                                       |                         |  |
|---------------------------------------|-------------------------|--|
| Holland, 50 cks.                      | W. Harrison & Co.       |  |
| " 42                                  | Robertson, Selley & Co. |  |
| " 36                                  | South Devon Wf. Co.     |  |
| <b>Bone Meal</b> —                    |                         |  |
| E. Indies, 114 t.                     | F. A. Hodgkinson & Co.  |  |
| <b>Camphor</b> —                      |                         |  |
| Germany, 3 cs.                        | S. Figgis & Co.         |  |
| <b>Caoutchouc</b> —                   |                         |  |
| France, 72 c.                         | Stiebel Bros.           |  |
| C. America, 31                        | Price, Hickman & Co.    |  |
| U. States, 82                         | L. & I. D. Jt. Co.      |  |
| " 89                                  | Prop. Bull Wf.          |  |
| Singapore, 95                         | Huttenbach & Co.        |  |
| Germany, 13                           | Wallace Bros.           |  |
| " 7                                   | Major & Field           |  |
| " 6                                   | W. M. Smith & Sons      |  |
| M'dagascar, 100                       | Hamaond & Co.           |  |
| Germany, 6                            | S. Figgis & Co.         |  |
| Belgium, 2                            | J. Harrison             |  |
| Madagascar, 21                        | Procter Bros.           |  |
| <b>Carbonic Acid</b> —                |                         |  |
| Germany, 122 pks.                     | Krayer, Back & Co.      |  |
| <b>Castor Oil</b> —                   |                         |  |
| Italy, 10 cs.                         | A. & M.                 |  |
| " 15                                  | Zimmermann              |  |
| " 15                                  | A. Laming & Co.         |  |
| <b>Caustic Potash</b> —               |                         |  |
| Holland, 3 pks.                       | J. Barber & Co.         |  |
| Belgium, 4 drs.                       | Petri Bros.             |  |
| France, 20                            | J. Barber & Co.         |  |
| " 45                                  | Phillips & Graves       |  |
| " 23                                  | 225 c. W. E. Cole       |  |
| <b>Caustic Soda</b> —                 |                         |  |
| Holland, 1 cs.                        | J. Barber & Co.         |  |
| <b>Chemicals (otherwise undes.)</b> — |                         |  |
| Denmark, £30                          | Bailey & Leatham        |  |
| Holland, 10                           | Beresford & Co.         |  |
| France, 25                            | H. Lorenz               |  |
| Germany, 37                           | L. & I. D. Jt. Co.      |  |
| " 43                                  | Phillips & Graves       |  |
| Belgium, 136                          | T. Palmer               |  |

|                          |                          |  |
|--------------------------|--------------------------|--|
| Germany, 5               | H. Lorenz                |  |
| France, 5                | Hernu, Peron & Co.       |  |
| Holland, 4 pks.          | J. Barber & Co.          |  |
| Germany, 7               | Jenson & Nicholson       |  |
| " 430                    | T. H. Lee                |  |
| " 200                    | A. & M.                  |  |
| " "                      | Zimmermann               |  |
| <b>Cobalt Ore</b> —      |                          |  |
| Australia, 34 t.         | Fellows, Morton & Co.    |  |
| <b>Cream of Tartar</b> — |                          |  |
| France, 2 cks.           | B. & F. Wf. Co.          |  |
| Italy, 22                | B. Jacob & Sons          |  |
| France, 5                | F. C. Devon & Co.        |  |
| Spain, 5                 | W. C. Bacon & Co.        |  |
| Italy, 5                 | B. & F. Wf. Co.          |  |
| " 0                      | "                        |  |
| <b>Dextrine</b> —        |                          |  |
| Germany, 100 bgs.        | Hernu, Peron & Co.       |  |
| <b>Dyestuffs</b> —       |                          |  |
| <b>Aniline</b>           |                          |  |
| Holland, 3 pks.          | L. C. & D. Rly.          |  |
| <b>Annatto</b>           |                          |  |
| U. States, 25 bgs.       | Major & Field            |  |
| <b>Argols</b>            |                          |  |
| Italy, 260 pks.          | Thames S. T. & L. Co.    |  |
| " 1,118                  | B. Jacob & Sons          |  |
| <b>Cochineal</b>         |                          |  |
| Canaries, 27 bgs.        | Sperling & Williams      |  |
| <b>Cutch</b>             |                          |  |
| Rangoon, 500 pks.        | Leach & Co.              |  |
| <b>Divi Divi</b>         |                          |  |
| E. Indies, 91 bgs.       | Culverwell, Brooks & Co. |  |
| <b>Extracts</b>          |                          |  |
| France, 1 ck.            | Prop. Hay's Wf.          |  |
| " 30                     | Union L. Co.             |  |
| Denmark, 1 cs.           | A. F. White & Co.        |  |
| " 60                     | Bailey & Leatham         |  |
| France, 110              | S. M. Frankenstein & Co. |  |
| " 15                     | "                        |  |

|                                          |                       |  |
|------------------------------------------|-----------------------|--|
| <b>Indigo</b>                            |                       |  |
| E. Indies, 20 chts.                      | Elkan & Co.           |  |
| " 10                                     | Wallace Bros.         |  |
| " 30                                     | G. S. N. Co.          |  |
| " 14                                     | Eales, Prince & Co.   |  |
| " 6                                      | Arbuthnot             |  |
| " 96                                     | Latham & Co.          |  |
| " 51                                     | J. Owen               |  |
| " 49                                     | R. von Glemn & Sons   |  |
| " 30                                     | P. Macfadyen & Co.    |  |
| " 31                                     | Walker, Munzie, & Co. |  |
| " 13                                     | Croysdale & Co.       |  |
| " 33                                     | H. Johnson & Sons     |  |
| " 15                                     | L. & I. D. Jt. Co.    |  |
| " 15                                     | W. H. Cole & Co.      |  |
| <b>Myrabolams</b>                        |                       |  |
| E. Indies, 450 bgs.                      | Dalton & Young        |  |
| " 1,577                                  | L. & I. D. Jt. Co.    |  |
| " 810                                    | Darling Bros.         |  |
| " 870                                    | Baxter & Hoar         |  |
| <b>Saffron</b>                           |                       |  |
| Spain, 1 cs.                             | J. Knill & Co.        |  |
| <b>Shumac</b>                            |                       |  |
| Italy, 500 bgs.                          | Union L. Co.          |  |
| " 1,120                                  | J. Kitchen, Ld.       |  |
| <b>Tanner's Bark</b>                     |                       |  |
| Belgium, 25 t.                           | Sawyer, Sons & Co.    |  |
| Natal, 21                                | A. & W. Nesbitt       |  |
| U. States, 2                             | Schloesser Bros.      |  |
| <b>Turmeric</b>                          |                       |  |
| E. Indies, 26 bgs.                       | L. & I. D. Jt. Co.    |  |
| " 26                                     | Anderson, Weber & Co. |  |
| China, 230                               | R. Warner & Co.       |  |
| <b>Valonia</b>                           |                       |  |
| A. Turkey, 50 t.                         | Adam Bros.            |  |
| E. Indies, 50                            | J. Graves             |  |
| <b>Dvestuffs (otherwise undescribed)</b> |                       |  |
| Singapore, 420 t.                        | Brinkmann & Co.       |  |
| <b>Farina</b> —                          |                       |  |
| Germany, 50 bgs.                         | J. T. Morten          |  |
| Holland, 200                             | Seaward Bros.         |  |
| " 50                                     | J. Knill & Co.        |  |
| Germany, 100                             | Seaward Bros.         |  |



|                                    |  |                                                         |  |                               |                            |                                          |                        |                           |                             |
|------------------------------------|--|---------------------------------------------------------|--|-------------------------------|----------------------------|------------------------------------------|------------------------|---------------------------|-----------------------------|
| <b>French Chalk—</b><br>Italy, 440 |  | C. F. Gerhardt                                          |  | Ceylon, 32                    | R. G. Hall & Co.           | Germany, 8                               | Elkan & Co.            | <b>Farina—</b>            |                             |
| <b>Glucose—</b>                    |  | G. Clark & Son                                          |  | Italy, 64                     | Henderson Bros.            | Belgium, 49 brls.                        | J. L. Lyon & Co.       | Fiume, 175 bgs.           | S. Vander Veen & Bro.       |
| U. States, 1,500 pks. 1,500 c.     |  | Vokins & Co. Ltd.                                       |  | Ceylon, 280 cks.              | B. Gallaway                | Holland, 20 cks.                         | A. & M. Zimmermann     | " 100                     | A. Baumann & Co.            |
| " 250 250 c.                       |  | Morton & Co.                                            |  | <b>Potassium Bicarbonate—</b> |                            | " 28                                     | Burrell & Co.          | <b>Flour Spar—</b>        |                             |
| " 3,258 3,258                      |  | Page, Son & East                                        |  | Holland, 10 pks.              | A. & M. Zimmermann         | " 50                                     | T. & W. Farmiloe       | Bremen, 33 cks.           |                             |
| " 50 300                           |  | Gillman & Spencer, Ltd.                                 |  | <b>Potassium Carbonate—</b>   |                            | " 360                                    | Johnsen & Jorgensen    | <b>Flux Skimmings—</b>    |                             |
| " 500 500                          |  | Thames S. T. & Co. Ltd.                                 |  | France, 60 c.                 | J. A. Reid                 | " 102 bls.                               | Ross & Deering         | Genoa, 11 pcs. 8 brls.    |                             |
| E. Indies, 250 250                 |  | Cole & Carey                                            |  | Holland, 4 cks.               | A. J. Luke & Co.           | Norway, 82                               | W. G. Taylor & Co.     | <b>Glucose—</b>           |                             |
| U. States, 500 500                 |  | Deering & Robottom                                      |  | Germany, 80 c.                | Petri Bros.                | Germany, 4                               | Pickford & Co.         | Hamburg, 44 cks.          |                             |
| " 100 600                          |  | J. Barber & Co.                                         |  | <b>Potassium Chloride—</b>    |                            | " 15                                     | Thames S. T. & Co.     | Newport News, 50 brls.    |                             |
| Holland, 50 50                     |  | Ohlenschlager Bros.                                     |  | Germany, 500 bgs.             | Anglo-Contl. G. Works      | Sweden, 81                               | Henderson, Craig & Co. | Boston, 100               |                             |
| U. States, 500 500                 |  | Trier, Meyer & Co.                                      |  | " 200                         | F. W. Berk & Co.           | " 120                                    | Johnsen & Jorgensen    | Philadelphia, 50          |                             |
| " 250 250                          |  | E. & T. Pink Proprs.                                    |  | " 500                         | R. Waters                  | Italy, 40 pks.                           | H. Lambert & Co.       | New York, 600             |                             |
| " 250 250                          |  | M. D. Co.                                               |  | <b>Potassium Sulphate—</b>    |                            | <b>Zinc Oxide—</b>                       |                        | <b>Glue—</b>              |                             |
| Germany, 25 202                    |  | J. Knill & Co.                                          |  | Germany, 500 bgs.             | Anglo-Contl. G. Works      | France, 5 cks                            | Prop. Hay's Wf.        | Rotterdam, 14 cks.        |                             |
| " 50 410                           |  | L. Norman & Co., Ltd.                                   |  | " 102                         | Bessler, Waechter, & Co.   | Germany, 16                              | Ross & Deering         | Rouen, 21                 | Co-op. W'sale Society, Ltd. |
| France, 200 200                    |  | Bennett S. S. & Co.                                     |  | <b>Pumice Stone—</b>          |                            | U. States, 100                           | M. Ashby, Ltd.         | Genoa, 24 brls.           | Inglis & Wulff              |
| J. States, 200 200                 |  | J. Keiller & Son, Ltd.                                  |  | Italy, 7 t.                   | W. J. Davies & Sons        | Holland, 50                              | "                      | <b>Lamp Black—</b>        |                             |
| " 50 287                           |  | R. G. Hall & Co.                                        |  | " 5                           | O'Hara & Hoar              | <b>Zinc White—</b>                       |                        | Gotthenburg, 25 cs.       |                             |
| " 4,825 5,685                      |  | B. & F. Wf. Co.                                         |  | <b>Pyrites—</b>               |                            | Holland, 20 cks.                         | Phillipps & Graves     | <b>Lime—</b>              |                             |
| France, 60 210                     |  | W. Balchin Williams, Torrey & Co. Barrett, Tagant & Co. |  | Spain, 1,281                  | Anderson, Anderson, & Co.  | <b>LIVERPOOL.</b>                        |                        | Rotterdam, 1 ck.          |                             |
| U. States, 500 500                 |  | " 1,765                                                 |  | " 1,765                       | C. Tennant, Sons, & Co.    | <b>Week ending April 2nd.</b>            |                        | <b>Limestone—</b>         |                             |
| " 300 558                          |  | " 130 btl.                                              |  | <b>Quicksilver—</b>           |                            | <b>Acetate of Lime—</b>                  |                        | Antwerp, 1 cs.            | J. T. Fletcher & Co.        |
| " 1,400 1,400                      |  | " 500 brls.                                             |  | Spain, 130 btl.               | H. J. Enthoven & Son       | New York, 256 bgs.                       |                        | <b>Lithopone—</b>         |                             |
| " 672                              |  | " 812                                                   |  | <b>Rosin Oil—</b>             |                            | <b>Acetic Acid—</b>                      |                        | Rotterdam, 6 cks.         |                             |
| " 51 t.                            |  | " 300                                                   |  | France, 65 brls.              | Barrett, Tagant, & Co.     | Rotterdam, 10 balloons                   |                        | <b>Manganese Ore—</b>     |                             |
| " 422                              |  | " 300                                                   |  | <b>Salicylates—</b>           |                            | <b>Alum—</b>                             |                        | Salonica, 2,200 t.        |                             |
| <b>Oxide—</b>                      |  | " 2 cs.                                                 |  | Holland, 2 cs.                | J. Barber & Co.            | Hamburg, 1 cs.                           |                        | <b>Mica—</b>              |                             |
| " 9,000 c.                         |  | " 88 cks.                                               |  | <b>Saltpetre—</b>             |                            | <b>Aluminous Cake—</b>                   |                        | New York, 7 brls.         |                             |
| " 250 t.                           |  | " 1,077 bgs.                                            |  | Germany, 88 cks.              | P. Hecker & Co.            | Rotterdam, 97 cks.                       |                        | <b>Mineral White—</b>     |                             |
| " 200                              |  | " 3                                                     |  | E. Indies, 1,077 bgs.         | L. & I. D. Jt. Co.         | <b>Ammonia—</b>                          |                        | Bordeaux, 200 bgs.        | R. J. Francis & Co.         |
| " 95                               |  | " 111                                                   |  | Holland, 111                  | J. Stockford               | Paris, 1 crt.                            | T. Edwards & Co.       | <b>Ochre—</b>             |                             |
| <b>d Acetate—</b>                  |  | " 70 cks.                                               |  | Germany, 70 cks.              | Phillipps & Graves         | <b>Aniline Colours—</b>                  |                        | Rouen, 50 cks.            | Co-op. W'sale Society, Ltd. |
| Holland, 17 cks.                   |  | " 1,136 bgs.                                            |  | E. Indies, 1,136 bgs.         | Lucas & Spencer's Wf.      | Paris, 7 cks.                            | C. C. Johnson          | <b>Paint—</b>             |                             |
| " 425                              |  | " 2,000 c.                                              |  | <b>Soda—</b>                  |                            | <b>Barytes—</b>                          |                        | Boston, 22 cs.            | Leech & Co.                 |
| " 16 cks.                          |  | " 4,000                                                 |  | Germany, 2,000 c.             | R. Waters                  | Rotterdam, 134 bgs.                      |                        | Smyrna, 45 kgs.           |                             |
| " 12 cks.                          |  | " 34 cks.                                               |  | Holland, 4,000                | H. Lorenz                  | Zarate, 920 bgs.                         | J. Nelson & Sons, Ltd. | <b>Paraffin Scale—</b>    |                             |
| " 20                               |  | " 30 cks.                                               |  | <b>Sodium Acetate—</b>        |                            | <b>Castor Oil—</b>                       |                        | New York, 363 brls.       | Anglo-Amer. Oil Co.         |
| " 20                               |  | " 30 cks.                                               |  | France, 34 cks.               | H. Lorenz                  | Genoa, 19 cs.                            | J. Bacon, Ltd.         | Philadelphia, 100 400 cs. |                             |
| <b>esium Sulphate—</b>             |  | " 30 cks.                                               |  | <b>Sodium Sulphate—</b>       |                            | <b>Chemicals (otherwise undescrbed.)</b> |                        | Genoa, 100 bgs.           |                             |
| many, 20 cks.                      |  | " 30 cks.                                               |  | Holland, 30 cks.              | C. Tennant, Sons, & Co.    | Rotterdam, 7 cs.                         |                        | Hamburg, 100 cks.         |                             |
| <b>ganese—</b>                     |  | " 30 cks.                                               |  | <b>Starch—</b>                |                            | Hamburg, 3 brls.                         |                        | Dunkirk, 11 22 dms        |                             |
| many, 20 t.                        |  | " 30 cks.                                               |  | Belgium, 48 cs.               | T. H. Lee                  | <b>Cod Oil—</b>                          |                        | Portland, M, 30 brls.     | Co-op. W'sale Society, Ltd. |
| " 120                              |  | " 30 cks.                                               |  | Holland, 40                   | G. Rahn & Co.              | Antwerp, 3 brls.                         |                        | <b>Pumice Stone—</b>      |                             |
| " 5                                |  | " 30 cks.                                               |  | U. States, 245 bgs.           | Beck & Pollitzer           | <b>Colours—</b>                          |                        | Teneriffe, 3 cs.          |                             |
| <b>yl Alcohol—</b>                 |  | " 30 cks.                                               |  | Belgium, 469 cs.              | Ohlenschlager Bros.        | Antwerp, 2 cks. 14 dms.                  |                        | <b>Pyrites—</b>           |                             |
| many, 10 dms.                      |  | " 30 cks.                                               |  | " 200                         | F. Claydon & Co.           | Baltimore, 2 pks.                        |                        | Huelva, 1,738 t.          | Matheson & Co.              |
| " 120 brls.                        |  | " 30 cks.                                               |  | " 100                         | Union L. Co.               | Rotterdam, 5 cs.                         |                        | <b>Rosin—</b>             |                             |
| " 10 dms.                          |  | " 30 cks.                                               |  | " 100                         | Sawer, Sons, & Co.         | Paris, 3                                 | Winterbottom           | N. Orleans, 3,000 brls.   |                             |
| " 17                               |  | " 30 cks.                                               |  | Holland, 690                  | Taylor Bros.               | <b>Cottonseed Oil—</b>                   |                        | New York, 337             |                             |
| " 40 cks.                          |  | " 30 cks.                                               |  | " 80                          | Little & Johnston          | New York, 535 brls.                      |                        | Boston, 150               |                             |
| " 134                              |  | " 30 cks.                                               |  | " 200                         | Phillipps & Graves         | <b>Disinfectants—</b>                    |                        | <b>Salt—</b>              |                             |
| " 308                              |  | " 30 cks.                                               |  | " 200                         | J. Barber & Co.            | New York, 24 cs.                         | W. Hutchinson & Son    | Hamburg, 325 bdl.         |                             |
| <b>ates—</b>                       |  | " 30 cks.                                               |  | " 200                         | R. G. Hall & Co.           | <b>Dyestuffs—</b>                        |                        | <b>Soap—</b>              |                             |
| " 3 cks. 10 c.                     |  | " 30 cks.                                               |  | <b>Stearine—</b>              |                            | Rotterdam, 4 carboys                     |                        | Newport News, 189 brls.   |                             |
| " 40 cks.                          |  | " 30 cks.                                               |  | Belgium, 250 bgs.             | H. Hill & Sons             | Bordeaux, 10 cks.                        | R. J. Francis & Co.    | Boston, 11 cs.            |                             |
| " 134                              |  | " 30 cks.                                               |  | France, 100                   | 130 cts. Walbaum & Tosetti | <b>Cochineal</b>                         |                        | Bari, 105                 |                             |
| <b>ate Rock—</b>                   |  | " 30 cks.                                               |  | <b>Tar—</b>                   |                            | Gd. Canary, 11 bgs.                      | Burrell & Co.          | <b>Soapstone—</b>         |                             |
| um, 206 t.                         |  | " 30 cks.                                               |  | N. Russia, 5 brls.            | C. B. Leighton             | Extracts, 33 cks.                        | E. M. Schweich         | Bordeaux, 500 bgs.        |                             |
| nd, 190                            |  | " 30 cks.                                               |  | France, 9 cks.                | B. & F. Wf. Co.            | New York, 60 brls.                       | 100 bxs.               | <b>Sodium Silicate—</b>   |                             |
| any, 14 brls.                      |  | " 30 cks.                                               |  | Holland, 11                   | J. Puddy & Co.             | Philadelphia, 721 ps.                    | Widow Duranty & Son    | Hamburg, 50 brls.         |                             |
| " 20 cks.                          |  | " 30 cks.                                               |  | " 18                          | B. & F. Wf. Co.            | <b>Putic</b>                             |                        | <b>Starch—</b>            |                             |
| " 20 cks.                          |  | " 30 cks.                                               |  | " 3                           | W. M. Smith & Sons         | <b>Colon,</b>                            |                        | Antwerp, 109 cs.          | J. T. Fletcher & Co.        |
| " 20 cks.                          |  | " 30 cks.                                               |  | <b>Ultramarine—</b>           |                            | " 1,854                                  |                        | Baltimore, 160            |                             |
| " 20 cks.                          |  | " 30 cks.                                               |  | Holland, 6 cks.               | Phillipps & Graves         | " 105                                    |                        | " 1,000 sks.              |                             |
| " 20 cks.                          |  | " 30 cks.                                               |  | Belgium, 12                   | G. Rahn & Co.              | Singapore, 1,594 bls.                    | E. Boustead & Co.      | Dunkirk, 40               |                             |
| " 20 cks.                          |  | " 30 cks.                                               |  | " 8                           | W. Harrison & Co.          | <b>Madder</b>                            |                        | Rotterdam, 205            |                             |
| " 20 cks.                          |  | " 30 cks.                                               |  | <b>Varnish—</b>               |                            | Rotterdam, 3 cks.                        |                        | Boston, 100 bgs.          |                             |
| " 20 cks.                          |  | " 30 cks.                                               |  | Germany, 3 pks.               | T. H. Lee                  | Palermo, 580 bgs.                        | 25 bls.                | <b>Stearine—</b>          |                             |
| " 20 cks.                          |  | " 30 cks.                                               |  | U. States, 10                 | W. E. Peck & Co.           | <b>Valonia</b>                           |                        | Antwerp, 13 bgs.          | J. T. Fletcher & Co.        |
| " 20 cks.                          |  | " 30 cks.                                               |  | Belgium, 5                    | Wilson & Co.               | <b>Syra,</b>                             |                        | Philadelphia, 172 tcs.    |                             |
| " 20 cks.                          |  | " 30 cks.                                               |  | Holland, 10 cks.              | Randall Bros.              | <b>Tallow—</b>                           |                        | Nicolas, 66 brls.         | J. Nelson & Sons, Ltd.      |
| " 20 cks.                          |  | " 30 cks.                                               |  | Germany, 48                   | A. Zumbeck & Co.           | <b>Zarate,</b>                           |                        | Boston, 312 pks.          | "                           |
| " 20 cks.                          |  | " 30 cks.                                               |  | Holland, 5                    | Petri Bros.                | <b>Philadelphia,</b>                     |                        | 250                       |                             |
| " 20 cks.                          |  | " 30 cks.                                               |  | " 25                          | H. B. Alder & Co.          | <b>New York,</b>                         |                        | 75 tcs.                   |                             |
| " 20 cks.                          |  | " 30 cks.                                               |  | " 25                          | J. Barber & Co.            | <b>100</b>                               |                        | 100 hds.                  | 600                         |



**Tartar**—  
Bordeaux, 20 cks. R. J. Francis & Co.

**Tartaric Acid**—  
Bordeaux, 5 cks.  
Bari, 17 brls.

**Treacle**—  
Philadelphia, 25 brls.  
Boston, 40  
Amsterdam, 10 Maple Sugar Co.

**Ultramarine**—  
Bremen, 4 cks.

**Varnish**—  
Antwerp, 3 kgs.

**Verdigris**—  
Bordeaux, 3 cks.

**Waste Salt**—  
Hamburg, 755 bgs.

**White Lead**—  
Antwerp, 16 brls.  
Rotterdam, 72 cks.

**Wood Pulp**—  
Gotenbourg, 170 bls.  
Rotterdam, 131  
New York, 6 cs Langstaff & Co.

**Zinc Ashes**—  
Constantinople, 36 bgs.

**Zinc Oxide**—  
Rotterdam, 50 cks.

**Zinc White**—  
Rotterdam, 111 cks.

## MANCHESTER.

Week ending April 4th.

**Acetic Acid**—  
Rotterdam, 29 blns.  
Antwerp, 44

**Alizarine**—  
Rotterdam, 5 cks.

**Alum Cake**—  
Rotterdam, 103 cks.

**Alumina Sulphate**—  
Rotterdam, 43 cks.

**Ammonium Acetate**—  
Rotterdam, 6 brls.

**Antimony**—  
Rotterdam, 14 cks.

**Antimony Salt**—  
Rotterdam, 5 cks.

**Colours**—  
Antwerp, 16 cs. 2 kgs.  
Hamburg, 6  
Rotterdam, 24 cks. 27 97 brls.  
15 bxs.

**Farina**—  
Rotterdam, 415 bgs.  
Hamburg, 940

**Glue**—  
Rotterdam, 7 cs. 20 bgs.  
Antwerp, 9 pks. J. T. Fletcher & Co.

Hamburg, 5 cks. 10 bskts. 20 bgs.  
Treport, 6 12 bls.

**Lead Oxide**—  
Rotterdam, 26 cks.

**Limestone**—  
Antwerp, 1 crte. J. T. Fletcher & Co.

**Pitch**—  
Hamburg, 80 brls.

**Potash**—  
Treport, 59 cks. 20 dms.

**Pyrites**—  
Huelva, 2,100 t.

**Starch**—  
Rotterdam, 5 cs.  
Ghent, 10  
Antwerp, 80  
Hamburg, 192

**Sulphuric Acid**—  
Rotterdam, 10 dms.

**White Lead**—  
Rotterdam, 12 cks.

**Zinc Oxide**—  
Rotterdam, 75 brls.  
Antwerp, 15 1 cs.

**Zinc Sulphate**—  
Rotterdam, 1 brl.

**Zinc White**—  
Rotterdam, 10 cks.

## HULL.

Week ending April 4th.

**Acids**—  
Rotterdam, 25 blns. W. & C. L. Ringrose  
Bari, 44 cks. Wilson, Sons, & Co., Ltd.

**Albumen**—  
Libau, 10 cs.  
Reval, 5

**Barytes**—  
Rotterdam, 58 cks. Hutchinson & Son

Bremen, 37 G. Holmes & Co.  
Antwerp, 163 180 bgs. Bailey & Leatham

101 H. F. Pudsey

**Chemicals (otherwise undes.)**—  
Bremen, 1 cs. Veltmann & Co.  
Antwerp, 1 kg. Johnson Bros.

39 pks. Wilson, Sons, & Co., Ltd.

**Cod Oil**—  
Drontheim, 7 brls. Wilson, Sons, & Co., Ltd.

Christiansund, 15 1/2  
Aalesund, 76  
Bergen, 90

**Colours**—  
Antwerp, 25 brls.  
Amsterdam, 2 cks. 1 cs. Hutchinson & Son

Ghent, 16 brls.  
Rotterdam, 18 20 32  
34 bxs. W. & C. L. Ringrose

Bremen, 22 Hutchinson & Son  
Antwerp, 2 A. Sanderson & Co.  
15 pks. Wilson, Sons, & Co., Ltd.

Trieste, 18 brls.

**Cryolite**—  
Copenhagen, 2 cks. Wilson, Sons, & Co., Ltd.

**Dyestuffs**—  
Alizarine  
Rotterdam, 22 cks. 10 brls. W. & C. L. Ringrose

2 bxs. 3 cs. C. L. Ringrose  
Amsterdam, 5 Hutchinson & Son

**Shumac**—  
Palermo, 1,700 bgs. Wilson, Sons, & Co., Ltd.

**Valonia**—  
Smyrna, 522 bgs. Wilson, Sons, & Co., Ltd.

**Farina**—  
Antwerp, 25 bgs. Wilson, Sons, & Co., Ltd.

Ghent, 525  
Harlingen, 100  
Hamburg, 225  
Stettin, 350

200 Aire & Calder N. Co.

**Glucose**—  
Rotterdam, 100 bgs. Hutchinson & Son

**Glue**—  
Hamburg, 45 bgs. Bailey & Leatham

Stettin, 20 cks. Wilson, Sons, & Co., Ltd.

**Lead Acetate**—  
Stettin, 28 cks. Wilson, Sons, & Co., Ltd.

**Lithopone**—  
Amsterdam, 20 cks. Hutchinson & Son

**Naphtha**—  
Rotterdam, 1 ck. Hutchinson & Son

**Phosphate**—  
Ghent, 200 t. Wilson, Sons, & Co., Ltd.

**Pitch**—  
Amsterdam, 25 cks. Hutchinson & Son

**Potash**—  
Dunkirk, 4 cks. Wilson, Sons, & Co., Ltd.

Hamburg, 10  
Antwerp, 4 Bailey & Leatham

**Pumice Stone**—  
Messina, 173 pks. Wilson, Sons, & Co., Ltd.

**Pyrites**—  
Huelva, 1,461 t.

**Salt**—  
Hango, 7 bxs. J. Good & Sons

**Saltpetre**—  
Antwerp, 135 bgs. Wilson, Sons, & Co., Ltd.

**Soap**—  
Gotenbourg, 2 bxs. Wilson, Sons, & Co., Ltd.

Bari, 100 cs.  
Newport, 70 brls.

**Starch**—  
Rotterdam, 10 cs. Hutchinson & Son

Reval, 1  
Sons, & Co., Ltd.

Bremen, 797 Veltmann & Co.  
Antwerp, 40 Bailey & Leatham

**Tallow**—  
Dunkirk, 10 cks. Wilson, Sons, & Co., Ltd.

Hamburg, 30 brls.

**Ultramarine**—  
Hamburg, 2 cks. Bailey & Leatham

Rotterdam, 28 1 cs. W. & C. L. Ringrose

8 Hutchinson & Son

**Waste Salt**—  
Hamburg, 508 bgs. Wilson, Sons, & Co., Ltd.

**White Lead**—  
Rotterdam, 19 cks. W. & C. L. Ringrose

Amsterdam, 20 Hutchinson & Son

**Wolfam**—  
Hamburg, 5 cs. Wilson, Sons, & Co., Ltd.

**Wood Pulp**—  
Hamburg, 260 pks. Bailey & Leatham

Hango, 45 bls. J. Good & Sons

Gotenbourg, 911 Wilson, Sons, & Co., Ltd.

Drontheim, 560  
Bergen, 536 pks.  
Christiania, 655

**Zinc Oxide**—  
Antwerp, 50 cks. Bailey & Leatham

## GLASGOW.

Week ending April 9th.

**Alizarine**—  
Rotterdam, 132 cks. 12 brls. J. Rankine & Son

42 pks.

**Aniline Salt**—  
Rotterdam, 10 cks. J. Rankine & Son

**Arachide Oil**—  
Rotterdam, 4 cks. J. Rankine & Son

**Barium Sulphate**—  
Louvain, 1,420 bgs. C. Schneider & Co.

Antwerp, 50

**Barytes**—  
Rotterdam, 145 cks. J. Rankine & Son

Hamburg, 200 bgs.

**Colours**—  
Rotterdam, 8 cks. 13 brls. 18 bxs. J. Rankine & Son

Hamburg, 2 cs.  
Rotterdam, 25 pks.

**Cottonseed Oil**—  
Baltimore, 60 brls.

**Gelatine**—  
Hamburg, 5 cs.

**Glucose**—  
New York, 600 brls.  
Baltimore, 250

**Glue**—  
New York, 97 brls.  
Rouen, 37 brls. 7 pks.

Rotterdam, 1 cs. 20 bgs. J. Rankine & Son

Nantes, 40 bls.

**Guano**—  
Iceland, 221 bgs.

**Gypsum**—  
Rouen, 1,500 bgs.

**Mercury**—  
Rotterdam, 2 cs. J. Rankine & Son

**Minium**—  
Rotterdam, 18 cks. J. Rankine & Son

**Ochre**—  
Rouen, 289 cks.

**Paint**—  
Boston, 25 cs.

**Painters' Colours**—  
Antwerp, 2 cks.

**Paraffin Scale**—  
New York, 180 brls.

**Potash**—  
Rouen, 9 cks.

**Sodium Nitrate**—  
Rotterdam, 4 cks. J. Rankine & Son

**Starch**—  
New York, 500 sks.  
Antwerp, 20 cs.

Rotterdam, 22 J. Rankine & Son

**Stearine**—  
Amsterdam, 125 bgs.

**Sulphur Ore**—  
Huelva, 1,901 t. Rio Tinto Co.

**Tallow**—  
New York, 65 trcs.  
Boston, 25  
Baltimore, 100

**Tartar**—  
Certe, 5 cks.

**Treacle**—  
Boston, 160 brls.

**Varnish**—  
New York, 26 brls. 1 cs. 1 bx.  
Rouen, 1

**White Lead**—  
Rotterdam, 108 cks. J. Rankine & Son

**Wood Pulp**—  
Drontheim, 650 bls.  
Rotterdam, 129 J. Rankine & Son

Christiania, 211

**Zinc Oxide**—  
New York, 100 brls.  
Antwerp, 25 cks.  
Hamburg, 45

**Zinc White**—  
Rotterdam, 25 cks. J. Rankine & Son

## TYNE.

Week ending April 4th.

**Cod Oil**—  
Trondhjem, 5 brls.

**Glue**—  
Rotterdam, 3 cks. Tyne S. S. Co.

**Pitch**—  
Rotterdam, 11 cks. Tyne S. S. Co.

**Quicksilver**—  
Copenhagen, 100 clydrs.

**Salt**—  
Hamburg, 730 t.

**Starch**—  
Rotterdam, 10 cs. Tyne S. S. Co.

**Wood Pulp**—  
Skein, 50 bls.

## GOOLE.

Week ending April 1st.

**Alizarine**—  
Rotterdam, 62 cks.

**Alkali**—  
Calais, 22 cks.

**Caoutchouc**—  
Boulogne, 2 cs.

**Colours**—  
Hamburg, 13 cks. 10 cs.  
Ghent, 2 1

**Dyestuffs (otherwise underscri.)**—  
Rotterdam, 157 cks. 34 cs.  
Boulogne, 61 8

**Farina**—  
Hamburg, 500 bgs.  
Amsterdam, 600  
Harlingen, 150

**Glue**—  
Boulogne, 3 cks.  
Rouen, 20 bgs.

**Logwood**—  
Hamburg, 48 t.  
Jamaica, 360  
Laguana-de-Terminus, 315

**Madder**—  
Rotterdam, 8 cks.

**Potash**—  
Hamburg, 40 cks.



|                        |                |                                                  |                                                                                          |                                                       |
|------------------------|----------------|--------------------------------------------------|------------------------------------------------------------------------------------------|-------------------------------------------------------|
| 17<br>12               | 34 dms.        | <b>Waste Salt—</b><br>Hamburg, 355 cks. 90 t.    | <b>Chemicals (otherwise undescribed)</b><br>Hamburg, 1 ck. 3 cs. 8 pks.<br>Rotterdam, 30 | <b>Dyes—</b><br>Antwerp, 47 cs.<br>Hamburg, 14 7 pks. |
| 25 cks.                | 85 bgs.<br>310 | <b>GRIMSBY.</b><br><i>Week ending April 4th.</i> | <b>Colours—</b><br>Hamburg, 8 cks. 9 cs.<br>Rotterdam, 6<br>Antwerp, 3 15 62 pks.        | <b>Extracts—</b><br>Dieppe, 9 cks.                    |
| <b>icate—</b><br>1 ck. |                | <b>Caoutchouc—</b><br>Hamburg, 4 cs.             |                                                                                          | <b>Farina—</b><br>Hamburg, 300 bgs.                   |
| 10 cks.                |                |                                                  |                                                                                          | <b>Wood Pulp—</b><br>Malmo, 240 bls.                  |

## EXPORTS OF CHEMICAL PRODUCTS

## THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

|                                                                                                |                                                                                                                         |                                                                                                                                                                                                                                                             |                                                       |
|------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|
| <b>LONDON.</b><br><i>ending April 8th.</i>                                                     | <b>Cream of Tartar—</b><br>Dunedin, 5 c. £27<br>Newcastle, 1 t. 15 183<br>Adelaide, 2 19 300                            | <b>Ammonium Chloride—</b><br>Smyrna, 12 c. 5 q. £25<br>Hamburg, 10 20<br>Ibrail, 6 12<br>Amsterdam, 6 10<br>Kurrachee, 1 t. 10 56<br>Philadelphia, 31 19 3 821<br>Toronto, 5 10                                                                             | <b>Dyes—</b><br>Antwerp, 47 cs.<br>Hamburg, 14 7 pks. |
| 6 cs. 2 c. £15<br>3 15                                                                         | <b>Disinfectants—</b><br>Calcutta, 5 cs. £28<br>Wellington, 1 t. 33                                                     | <b>Ammonium Sulphate—</b><br>Gijon, 10 t. 2 c. £93<br>Portland, M., 9 16 2 q. 44<br>Sourabaya, 69 18 2 630<br>Philadelphia, 102 5 831<br>Palermo, 10 10 90<br>Valencia, 130 10 4 1,053<br>Samarang, 134 4 1,184<br>Barcelona, 24 19 3 206<br>Ghent, 100 850 | <b>Extracts—</b><br>Dieppe, 9 cks.                    |
| 4 t. £110<br>10 2 c. 48                                                                        | <b>Manure—</b><br>Limon, 80 t. £640<br>Guatemala, 5 40<br>Jamaica, 25 163                                               | <b>Arsenic—</b><br>Portland, M., 33 t. 14 c. 6 q. £639                                                                                                                                                                                                      | <b>Farina—</b><br>Hamburg, 300 bgs.                   |
| <b>(Liquid)—</b><br>2 cs. £14                                                                  | <b>Muriatic Acid—</b><br>La Plata, 5 c. £10                                                                             | <b>Barium Nitrate—</b><br>Genoa, 1 t. 11 c. 2 q. £24                                                                                                                                                                                                        | <b>Wood Pulp—</b><br>Malmo, 240 bls.                  |
| <b>m Carbonate—</b><br>6 t. 1 c. £180                                                          | <b>Oxalic Acid—</b><br>Auckland, 1 ck. £14                                                                              | <b>Bisulphite of Lime—</b><br>Oporto, 7 c. £7                                                                                                                                                                                                               |                                                       |
| <b>m Chloride—</b><br>ople, 5 t. £175                                                          | <b>Phosphorus—</b><br>St. Cruz de Tenerife, 4 cs. £44                                                                   | <b>Bleaching Powder—</b><br>Baltimore, 116 cks.<br>Boston, 667 124 cs.                                                                                                                                                                                      |                                                       |
| <b>m Sulphate—</b><br>30 t. 13 c. £259<br>510 4,478<br>50 420                                  | <b>Potash Crystals—</b><br>San Francisco, 1 cs. £24                                                                     | <b>Bone Ash—</b><br>Stockholm, 15 t. £71                                                                                                                                                                                                                    |                                                       |
| <b>is Phosphorus—</b><br>1 cs. £14                                                             | <b>Salt Cake—</b><br>Terneuzen, 200 t. £201                                                                             | <b>Boric Acid—</b><br>Hiogo, 3 t. 2 q. £78<br>Brisbane, 10 c. 17<br>Vera Cruz, 4 6<br>Antwerp, 1 1 28<br>M. Video, 12 1 12                                                                                                                                  |                                                       |
| 1 t. £22                                                                                       | <b>Saltpetre—</b><br>Sydney, 1 t. 5 c. £28<br>Auckland, 10 12<br>B. Ayres, 1 5 30                                       | <b>Boracite—</b><br>New York, 300 t. £3,000                                                                                                                                                                                                                 |                                                       |
| <b>otash—</b><br>15 c. £25                                                                     | <b>Sheep Dip—</b><br>Melbourne, 150 drs. £45<br>Calcutta, 60 37<br>Algoa Bay, 3 600 900<br>B. Ayres, 260 25 cs. 205     | <b>Borax—</b><br>Brisbane, 10 c. £11<br>Hamburg, 1 t. 20<br>Antwerp, 2 4 1 q. 48<br>Stockholm, 2 17 2 61<br>Ibrail, 5 2 6<br>Ghent, 10 2 3 703<br>Sydney, 60 60<br>Barcelona, 4 18 1 98<br>Talcahuano, 10 1 1 11<br>Rotterdam, 17 6 5 360                   |                                                       |
| 5 t. 5 c. £29<br>1 8 38<br>1 9 26                                                              | <b>Soda Alkali—</b><br>Rotterdam, 5 t. £30<br>Cape Town, 6 c. 7                                                         | <b>Calcium Chlorate—</b><br>New York, 9 t. £31                                                                                                                                                                                                              |                                                       |
| <b>(otherwise undescribed)</b><br>11 t. 3 c. £135                                              | <b>Soda Ash—</b><br>Lisbon, 1 t. 12 c. £12                                                                              | <b>Calcium Chloride—</b><br>Pt. Said, 3 t. 19 c. £9<br>Melbourne, 10 7 25                                                                                                                                                                                   |                                                       |
| 12 kgs. 1 bg. 11 cs. 55<br>1 1 brl. 9 182<br>1 1 brl. 3 30<br>4 pks. 49 28<br>1 ck. 1 brl. 143 | <b>Sodium Bicarbonate—</b><br>Napier, 2 t. £13<br>Brisbane, 7 32<br>Perth, 3 21<br>Auckland, 4 26<br>Algoa Bay, 14 c. 8 | <b>Carbolic Acid—</b><br>Marseilles, 2 t. 19 c. £189<br>Colon, 4 10 64<br>Rouen, 14 18 128<br>Barcelona, 1 6 86<br>Rotterdam, 51 2,947<br>St. Louis, 6 2 3 q. 300<br>Genoa, 1 63                                                                            |                                                       |
| <b>of Lime—</b><br>1 t. 3 c. £13                                                               | <b>Sodium Carbonate—</b><br>Adelaide, 10 c. £7                                                                          | <b>Carbolic Acid Gas—</b><br>Gibraltar, 9 c. 1 q. £10<br>Madeira, 2 1 5                                                                                                                                                                                     |                                                       |
| 3 5 £16<br>3 39<br>2 13<br>4 kgs. 1 brl. 39<br>3 19                                            | <b>Sulphur—</b><br>Lisbon, 400 brls 4 t. 8 c. £325<br>B. Ayres, 1 5 18                                                  | <b>Cautic Potash—</b><br>Kingston, 3 c. £4                                                                                                                                                                                                                  |                                                       |
| <b>ucts—</b><br>6 cs. £318                                                                     | <b>Sulphuric Acid—</b><br>Delagoa Bay, 3 t. £13<br>Colombo, 20 cs. 13<br>Natal, 1 15 c. 10                              | <b>Cautic Soda—</b><br>Adelaide, 153 dms.<br>Algoa Bay, 40 cs.<br>Baltimore, 554<br>Beyrout, 20                                                                                                                                                             |                                                       |
| <b>Salts</b><br>10 cks. £70                                                                    | <b>Superphosphates—</b><br>Trinidad, 27 t. 14 c. £100<br>Barbadoes, 100 278                                             |                                                                                                                                                                                                                                                             |                                                       |
| 1, 35 cks. 69 pks. £739<br>1, 1 drs. 125                                                       | <b>Tartaric Acid—</b><br>Dunedin, 2 c. £13<br>Newcastle, 10 t. 66<br>B. Ayres, 1 4 cks. 133<br>Adelaide, 1 130          |                                                                                                                                                                                                                                                             |                                                       |
| <b>c Acid</b><br>80 cks. £357<br>42 5 cs. 200<br>30 75                                         | <b>LIVERPOOL.</b><br><i>Week ending April 8th.</i>                                                                      |                                                                                                                                                                                                                                                             |                                                       |
| 100 cks. £68<br>2 cs. 11                                                                       | <b>Albumen—</b><br>New York, 2 t. 17 c. 2 q. £240                                                                       |                                                                                                                                                                                                                                                             |                                                       |
| News, 1,000 bgs. £990<br>113 t. 226                                                            | <b>Alum—</b><br>Smyrna, 9 t. 3 c. £49<br>Toronto, 2 19 1 q. 14<br>Volo, 1 9 3 7<br>Varna, 4 9 1 21<br>Ibrail, 1 5 7     |                                                                                                                                                                                                                                                             |                                                       |
| 10 brls. £11<br>30 drs. 10<br>20 cks. 13                                                       | <b>Aluminous Cake—</b><br>St. John, N.B., 12 t. 3 c. 2 q. £33                                                           |                                                                                                                                                                                                                                                             |                                                       |
| <b>ucts (otherwise under)</b><br>63 pks. £15                                                   | <b>Ammonia (Liquid)—</b><br>Coquimbo, 3 c. 2 q. £7<br>Cape Town, 7 18                                                   |                                                                                                                                                                                                                                                             |                                                       |
| <b>ulphate—</b><br>212 t. £4,258<br>35 645                                                     | <b>Ammonium Carbonate—</b><br>Fairwater, 1 t. £36                                                                       |                                                                                                                                                                                                                                                             |                                                       |







|                     |         |  |
|---------------------|---------|--|
| il—                 |         |  |
| 10 dms.             | 2 tins  |  |
| 5                   |         |  |
| alt—                |         |  |
| 10 cks.             | 13 pns. |  |
| 1                   |         |  |
| 1 cs.               |         |  |
| 72 dms.             |         |  |
| oda—                |         |  |
| 50 dms.             |         |  |
| 4 brls.             |         |  |
| (otherwise undes.)— |         |  |
| 10 brls.            |         |  |
| 8 cks.              |         |  |
| 6 cks.              |         |  |
| 10                  |         |  |
| phate—              |         |  |
| 100 dms.            |         |  |
| 30 brls.            |         |  |
| White—              |         |  |
| aneiro, 20 c.       |         |  |
| Colours—            |         |  |
| 18 c.               |         |  |
| 306 t.              |         |  |
| 75                  |         |  |
| m, 200 t.           |         |  |
| 20 bgs.             |         |  |
| 2 bxs. 3 cs.        |         |  |
| Bicarbonate—        |         |  |
| 34 kgs.             |         |  |
| c Acid—             |         |  |
| aneiro, 28 cs.      |         |  |
| m, 4 dms.           |         |  |
| 26 brls.            |         |  |

**HULL.**

Week ending April 4th

|                             |  |  |
|-----------------------------|--|--|
| um Sulphate—                |  |  |
| 120 bgs.                    |  |  |
| 390 bgs.                    |  |  |
| 45                          |  |  |
| 140                         |  |  |
| am, 1,703                   |  |  |
| 189                         |  |  |
| Carbonate—                  |  |  |
| 100 t.                      |  |  |
| am, 25 cks.                 |  |  |
| am, 25                      |  |  |
| ng Powder—                  |  |  |
| 6 cks.                      |  |  |
| 181                         |  |  |
| nia, 1 cs.                  |  |  |
| soda—                       |  |  |
| 5 dms.                      |  |  |
| als (otherwise undescribed) |  |  |
| lam 7 cks.                  |  |  |
| 2 cs.                       |  |  |
| 20                          |  |  |
| 28                          |  |  |
| 15 pks.                     |  |  |
| agen, 10                    |  |  |
| 60                          |  |  |
| burg, 19                    |  |  |
| 5                           |  |  |
| 11                          |  |  |
| rg, 2                       |  |  |
| 255                         |  |  |
| 5                           |  |  |
| 10                          |  |  |
| 1                           |  |  |
| berg, 3                     |  |  |
| 2                           |  |  |
| 30                          |  |  |
| ork, 55                     |  |  |
| 100                         |  |  |
| 100                         |  |  |
| 21 kgs.                     |  |  |
| eed Oil—                    |  |  |
| dam, 1,66 c.                |  |  |
| px, 1,156                   |  |  |
| 20                          |  |  |
| 30                          |  |  |
| agen, 201                   |  |  |
| 100                         |  |  |
| 400                         |  |  |
| 1,607                       |  |  |
| 60                          |  |  |
| 866                         |  |  |
| lam, 866                    |  |  |
| olm, 652                    |  |  |
| its (otherwise undescribed) |  |  |
| dam, 1 ck.                  |  |  |

|                    |               |          |
|--------------------|---------------|----------|
| Christiania,       | 12 bgs.       |          |
| Danzig,            | 1 cs. 2 kgs.  |          |
| Libau,             |               |          |
| Stettin,           | 2 62 bgs.     |          |
| Glue—              |               |          |
| Ghent,             | 3 cks.        |          |
| Hango,             | 1 10 cs.      |          |
| Rotterdam,         | 1             |          |
| Linseed Oil—       |               |          |
| Aalesund,          | 43 c.         |          |
| Amsterdam,         | 241           |          |
| Bordeaux,          | 36            |          |
| Boston,            | 52            |          |
| Bergen,            | 70            |          |
| Christiansand,     | 17            |          |
| Christiansund,     | 43            |          |
| Christiania,       | 889           |          |
| Copenhagen,        | 61            |          |
| Drontheim,         | 7             |          |
| Hamburg,           | 89            |          |
| New York,          | 180           |          |
| Stavanger,         | 42            |          |
| Manganese—         |               |          |
| Reval,             | 2 bxs.        |          |
| Manure—            |               |          |
| Stettin,           | 1,400 bgs.    |          |
| Painters' Colours— |               |          |
| Amsterdam,         | 12 cks. 4 cs. |          |
| Antwerp,           | 36            | 2 pks.   |
| Bordeaux,          | 5             |          |
| Bremen,            | 4             |          |
| Boston,            | 30            |          |
| Bergen,            |               | 100 dms. |
| Christiania,       | 15            |          |
| Copenhagen,        | 5             | 4        |
| Dunkirk,           | 2             |          |
| Ghent,             | 8             | 1        |
| Gothenburg,        | 2             | 6        |
| Hamburg,           | 41            | 2        |
| Hango,             | 13            |          |
| New York,          | 20            |          |
| Rotterdam,         | 22            | 15       |
| Reval,             | 1             |          |
| Stockholm,         | 30            | 1        |
| Stettin,           | 30            | 1        |
| Pitch—             |               |          |
| Antwerp,           | 267 t.        |          |
| Bergen,            | 5 cks.        |          |
| Christiansund,     | 10            |          |
| Soap—              |               |          |
| Copenhagen,        | 1 cs.         |          |
| Drontheim,         | 20            |          |
| Tallow—            |               |          |
| Stockholm,         | 27 cks.       |          |
| Tar—               |               |          |
| Amsterdam,         | 6 cks.        |          |
| Bremen,            | 22            |          |
| Copenhagen,        | 44            | 126 cs.  |
| Hamburg,           | 3             |          |
| Bergen,            | 1             |          |
| Danzig,            | 8             |          |
| Hango,             | 1             |          |
| Rotterdam,         | 8             |          |
| Stettin,           | 10            | 1        |
| Toluol—            |               |          |
| Amsterdam,         | 25 cks.       |          |
| Treacle—           |               |          |
| Gothenburg,        | 10 cks.       |          |
| Varnish—           |               |          |
| Antwerp,           | 1 ck.         | 3 cs.    |
| Bordeaux,          | 3             |          |
| Ghent,             |               | 4        |
| Gothenburg,        |               | 1        |
| Hamburg,           |               | 4        |
| Hango,             |               | 3        |

**GLASGOW.**

Week ending April 9th.

|                    |             |       |
|--------------------|-------------|-------|
| Ammonium Sulphate— |             |       |
| Pt. Louis,         | 20 t.       |       |
| Antwerp,           | 152         |       |
| Bleaching Powder—  |             |       |
| Calcutta,          | 102 t. 7 c. |       |
| Caustic Soda—      |             |       |
| B. Ayres,          | 14 t. 13 c. |       |
| Coal Products—     |             |       |
| Alizarine          |             | £26   |
| Lisbon,            |             |       |
| Aniline Salts      |             | £24   |
| Lisbon,            |             |       |
| Creosote Oil       |             | £28   |
| Christiania,       |             |       |
| Pitch              |             |       |
| Amsterdam,         | 250 t.      |       |
| Danzig,            | 396         | 18 c. |
| Gothenburg,        |             |       |
| Madras,            |             |       |
| Antwerp,           | 385         |       |
| Tar                |             |       |
| Calcutta,          |             | £48   |
| Danzig,            | 662 brls.   |       |

|                                   |              |          |
|-----------------------------------|--------------|----------|
| Tar Oil                           |              |          |
| B. Ayres,                         |              | £215     |
| Rotterdam,                        | 5 t. 10 c.   |          |
| Coal Products (otherwise undes.)— |              | £118     |
| Rotterdam,                        |              |          |
| Copperas—                         |              |          |
| Madras,                           |              | £2,756   |
| Cream of Tartar—                  |              |          |
| Algoa Bay,                        |              | £22      |
| Dyestuffs (otherwise undescribed) |              | £20      |
| Calcutta,                         |              |          |
| Extracts—                         |              |          |
| Lisbon,                           |              | £61      |
| Christiania,                      |              | £9. 14s. |
| Canada,                           |              | £48      |
| Gothenburg,                       |              | 24       |
| Farina—                           |              |          |
| Antwerp,                          | 2 t.         |          |
| Iodine—                           |              |          |
| Rotterdam,                        |              | £380     |
| Iron Sulphate—                    |              |          |
| Calcutta,                         | 27 t. 14½ c. |          |
| Logwood—                          |              |          |
| Lisbon,                           |              | £82      |
| Magnesium Sulphate—               |              |          |
| Christiania,                      |              | £31      |
| Painters' Colours—                |              |          |
| Cape Town,                        |              | £105     |
| Durban,                           |              | 267      |
| Huelva,                           |              | 73       |
| Rotterdam,                        |              | 6        |
| Calcutta,                         |              | 443      |
| Colombo,                          |              | 62       |
| Paraffin Wax—                     |              |          |
| Christiania,                      |              | £60      |
| Antwerp,                          | 1 t. 3¾ c.   |          |
| Madras,                           |              | 63       |
| Potassium Bichromate—             |              |          |
| Rotterdam,                        |              | £419     |
| Potassium Prussiate—              |              |          |
| Montreal,                         | 1 t. 2 c.    |          |
| Rosin Oil—                        |              |          |
| Amsterdam,                        |              | £20      |
| Sheep Dip—                        |              |          |
| B. Ayres,                         |              | £279     |
| Soap—                             |              |          |
| E. London,                        | 4 t. 1 c.    |          |
| Sodium Arseniate—                 |              |          |
| Lisbon,                           |              | £30      |
| Starch—                           |              |          |
| Lisbon,                           |              | £127     |
| Sulphuric Acid—                   |              |          |
| Colombo,                          |              | £35      |
| Madras,                           |              | 60       |
| Tallow—                           |              |          |
| Lisbon,                           | 24 t. 7 c.   |          |
| Rotterdam,                        | 20           | 17       |
| Treacle—                          |              |          |
| Algoa Bay,                        | 2 t. 14 c.   |          |
| Christiania,                      |              | 397      |
| E. London,                        | 2            | 18       |
| Zinc Ashes—                       |              |          |
| Rotterdam,                        | 10 t.        |          |

**TYNE.**

Week ending April 4th.

|                     |            |    |
|---------------------|------------|----|
| Alkali—             |            |    |
| Rotterdam,          | 8 t. 8 c.  |    |
| Ammonia—            |            |    |
| Christiania,        | 6 crbys.   |    |
| Ammonium Carbonate— |            |    |
| Barcelona,          | 1 t. 10 c. |    |
| Ammonium Chloride—  |            |    |
| Barcelona,          | 7 t. 6 c.  |    |
| Antimony—           |            |    |
| Rotterdam,          | 1 t. 2 c.  |    |
| Hamburg,            | 2          | 10 |
| Arsenic—            |            |    |
| Barcelona,          | 2 t.       |    |
| Barium—             |            |    |
| Rouen,              | 6 t. 2 c.  |    |
| Bleaching Powder—   |            |    |
| Rotterdam,          | 29 t. 2 c. |    |
| Libau,              | 36         | 1  |
| Aarhus,             | 1          | 15 |
| Trondhjem,          | 9          | 18 |
| Christiania,        | 1          | 10 |
| Hamburg,            | 6          | 2  |
| Antwerp,            | 25         | 12 |
| Carbolic Acid—      |            |    |
| Rotterdam,          | 5 t. 14 c. |    |
| Caustic Soda—       |            |    |
| Rotterdam,          | 42 t. 9 c. |    |
| Barcelona,          | 23         | 15 |
| Stavanger,          | 1          | 4  |

|                      |             |        |
|----------------------|-------------|--------|
| Hamburg,             | 11          | 17     |
| Antwerp,             | 29          | 19     |
| Colours—             |             |        |
| Copenhagen,          |             | 2 c.   |
| Antwerp,             |             | 16     |
| Gelatine—            |             |        |
| Bergen,              |             | 1 c.   |
| Glue—                |             |        |
| Bergen,              |             | 1 q.   |
| Litharge—            |             |        |
| Hamburg,             | 2 t. 3 c.   |        |
| Magnesia—            |             |        |
| Barcelona,           | 13 t. 18 c. |        |
| Hamburg,             |             | 9      |
| Antwerp,             |             | 4      |
| Manure—              |             |        |
| Trondhjem,           | 20 t.       |        |
| Helsingborg,         | 503         | 16 c.  |
| Paint—               |             |        |
| Genoa,               | 2 t. 8 c.   |        |
| Bergen,              |             | 5      |
| Hamburg,             |             | 10     |
| Antwerp,             |             | 1      |
| Phosphorus—          |             |        |
| Barcelona,           | 1 t. 18 c.  |        |
| Rosin Oil—           |             |        |
| Antwerp,             | 3 t. 13 c.  |        |
| Sheep Dip—           |             |        |
| Bergen,              |             | 11 c.  |
| Slag—                |             |        |
| Rotterdam,           | 200 t.      |        |
| Soda—                |             |        |
| Aarhus,              | 4 t. 19 c.  |        |
| Christiania,         |             | 10     |
| Rotterdam,           |             | 53     |
| Soda Ash—            |             |        |
| Hamburg,             | 5 t. 1 c.   |        |
| Sodium Hyposulphite— |             |        |
| Barcelona,           | 1 t. 1 c.   |        |
| Sodium Sulphate—     |             |        |
| Antwerp,             | 19 t. 15 c. |        |
| Varnish—             |             |        |
| Bergen,              |             | 2 c.   |
| Kiel,                |             | 3 t. 7 |
| White Lead—          |             |        |
| Copenhagen,          | 1 t. 6 c.   |        |

**GOOLE.**

Week ending April 1st.

|                                   |               |         |
|-----------------------------------|---------------|---------|
| Benzol—                           |               |         |
| Rotterdam,                        | 71 cks.       | 12 dms. |
| Chemicals (otherwise undescribed) |               |         |
| Amsterdam,                        | 20 cks.       |         |
| Boulogne,                         |               | 1 cs.   |
| Rotterdam,                        | 7             |         |
| Coal Products (otherwise undes.)— |               |         |
| Boulogne,                         | 52 cks. 1 cs. |         |
| Ghent,                            |               | 8       |
| Rotterdam,                        | 132           | 5       |
| Colours—                          |               |         |
| Boulogne,                         | 4 cks. 1 cs.  |         |
| Ghent,                            |               | 1       |
| Harlingen,                        | 400 bgs.      |         |
| Dyestuffs (otherwise undescribed) |               |         |
| Antwerp,                          | 2 cks.        |         |
| Hamburg,                          | 62            |         |
| Rotterdam,                        |               | 1 cs.   |
| Manure—                           |               |         |
| Brest,                            | 150 t.        |         |
| Ghent,                            | 160 bgs.      |         |
| Rotterdam,                        | 10            |         |
| Pitch—                            |               |         |
| Antwerp,                          | 332 t.        |         |
| Dunkirk,                          | 394           |         |

**GRIMSBY.**

Week ending April 4th.

|                                   |                |                |
|-----------------------------------|----------------|----------------|
| Chemicals (otherwise undescribed) |                |                |
| Malmo,                            | 1 cs.          |                |
| Rotterdam,                        | 20 dms.        |                |
| Coal Products (otherwise undes.)— |                |                |
| Dieppe,                           | 128 cks. 2 cs. |                |
| Hainburg,                         | 20             | 2 pks. 8 bils. |
| Dyestuffs (otherwise undescribed) |                |                |
| Dieppe,                           | 1 cs.          |                |
| Manure—                           |                |                |
| Esbjerg,                          | 1,020 bgs.     |                |
| Painters' Colours—                |                |                |
| Antwerp,                          | 6 cks. 1 cs.   |                |
| Dieppe,                           | 11             | 2              |
| Hamburg,                          |                | 1 dm.          |
| Pitch—                            |                |                |
| Antwerp,                          | 5 t.           |                |



## PRICES CURRENT.

WEDNESDAY, APRIL 15TH,

PREPARED BY MESSRS. HIGGINBOTTOM AND CO., 116, PORTLAND STREET, MANCHESTER.

The values stated are F.O.R. at maker's works, or at usual ports of shipment in U.K. The price in different localities may

## Acids:—

|                                         | £            | s.   | d.      |
|-----------------------------------------|--------------|------|---------|
| Acetic, 25 % and 40 % .. .. .           | per cwt.     | 6/   | & 9/-   |
| " Glacial .. .. .                       | "            | 40/- |         |
| Arsenic S.G., 2000° .. .. .             | "            | 1    | 2 0     |
| Fluoric .. .. .                         | per lb.      | 0    | 0 3 1/4 |
| Muriatic (Tower Salts), 30° Tw. .. .. . | per bottle   | 0    | 0 10    |
| " (Cylinder), 30° Tw. .. .. .           | "            | 0    | 3 0     |
| Nitric 80° Tw. .. .. .                  | per lb.      | 0    | 0 1 1/4 |
| Nitrous .. .. .                         | "            | 0    | 0 1 1/4 |
| Oxalic .. .. .                          | nett         | 0    | 0 3 1/2 |
| Phosphoric, 1750° .. .. .               | "            | 0    | 1 0     |
| Picric .. .. .                          | "            | 0    | 0 11    |
| Sulphuric (fuming 50 %) .. .. .         | per ton      | 15   | 10 0    |
| " (monohydrate) .. .. .                 | "            | 5    | 10 0    |
| " (Pyrites, 168°) .. .. .               | "            | 3    | 0 0     |
| " " 150° .. .. .                        | "            | 1    | 5 0     |
| " (free from arsenic, 145°) .. .. .     | "            | 1    | 7 6     |
| Sulphurous (solution) S.G. 1025 .. .. . | "            | 3    | 0 0     |
| Tannic (pure) .. .. .                   | per lb.      | 0    | 1 2     |
| Tartaric .. .. .                        | "            | 0    | 1 2 1/2 |
| Arsenic, white powdered .. .. .         | nett per ton | 23   | 10 0    |
| Alum (loose lump) .. .. .               | "            | 4    | 12 6    |
| Alumina Sulphate (pure) .. .. .         | "            | 4    | 12 6    |
| Aluminoferrous .. .. .                  | "            | 2    | 7 6     |
| Aluminium .. .. .                       | per lb.      | 0    | 2 10    |
| Ammonia, Anhydrous .. .. .              | "            | 0    | 1 3     |
| " 880=28° B. .. .. .                    | per lb.      | 0    | 0 2 1/4 |
| " =24° B. .. .. .                       | "            | 0    | 0 1 1/4 |
| " Carbonate .. .. .                     | nett         | 0    | 0 3 1/4 |
| " Muriate .. .. .                       | per ton      | 22   | 0 0     |
| " (sal-ammoniac) 1st & 2nd .. .. .      | per cwt.     | 39/- | & 37/-  |
| " Nitrate .. .. .                       | per ton      | 37   | 10 0    |
| " Phosphate .. .. .                     | per lb.      | 0    | 0 6 1/2 |
| " Sulphate (grey) London .. .. .        | per ton      | 8    | 0 0     |
| " (grey) Hull .. .. .                   | "            | 7    | 16 3    |
| Aniline Oil (pure) .. .. .              | per lb.      | 0    | 0 7 1/4 |
| Aniline Salt .. .. .                    | "            | 0    | 0 6 1/4 |
| Antimony .. .. .                        | per ton      | 30   | 5 0     |
| " (tartar emetic) .. .. .               | per lb.      | 0    | 0 9 1/2 |
| " (golden sulphide) .. .. .             | "            | 0    | 0 10    |
| Barium Chloride .. .. .                 | per ton      | 7    | 0 0     |
| " Carbonate (native) .. .. .            | "            | 3    | 10 0    |
| " Sulphate (native levigated) .. .. .   | "            | 42/6 | to 65/- |
| Bleaching Powder, 35 % .. .. .          | nett         | 7    | 0 0     |
| " Liquor, 7 % .. .. .                   | "            | 3    | 10 0    |
| Bisulphide of Carbon .. .. .            | "            | 12   | 10 0    |
| Chromium Acetate (crystal) .. .. .      | per lb.      | 0    | 0 6     |
| Calcium Chloride .. .. .                | per ton      | 2    | 2 6     |
| China Clay (at Runcorn) in bulk .. .. . | "            | 15/- | to 30/- |

## Coal Tar Products and Dyes:—

|                                            |                   |    |          |
|--------------------------------------------|-------------------|----|----------|
| Alizarine (artificial) 20 % .. .. .        | nett per lb.      | 0  | 0 7 1/4  |
| Magenta .. .. .                            | "                 | 0  | 3 9      |
| Anthracene, 30 % A, f.o.b. London .. .. .  | per unit per cwt. | 0  | 0 11 1/2 |
| Benzol, 90 % .. .. .                       | per gallon        | 0  | 2 0      |
| " 50/90 .. .. .                            | "                 | 0  | 1 8      |
| Carbolic Acid (crystallised 40°) .. .. .   | per lb.           | 0  | 0 8      |
| " (crude 60°) .. .. .                      | per gallon        | 0  | 2 2      |
| Creosote (ordinary) .. .. .                | "                 | 0  | 0 1      |
| " (filtered for Lucigen light) .. .. .     | "                 | 0  | 0 1 1/4  |
| Crude Naphtha 30 % @ 120° C. .. .. .       | "                 | 0  | 0 9      |
| Grease Oils, 22° Tw. .. .. .               | per ton           | 2  | 10 0     |
| Pitch, f.o.b. Liverpool or Garston .. .. . | "                 | 1  | 13 0     |
| Solvent Naphtha, 90 % at 160° .. .. .      | per gallon        | 0  | 1 3      |
| " Lucigen" and "Wells" Oils .. .. .        | "                 | 0  | 0 2 1/2  |
| Copper .. .. .                             | per ton           | 44 | 10 0     |
| " Sulphate .. .. .                         | "                 | 17 | 15 0     |
| " Oxide (copper scales) .. .. .            | "                 | 41 | 10 0     |
| Glycerine (crude) .. .. .                  | "                 | 36 | 0 0      |
| " (distilled S.G. 1250°) .. .. .           | "                 | 75 | 0 0      |
| Iodine .. .. .                             | nett, per oz.     | 0  | 0 9      |
| Iron Sulphate (copperas) .. .. .           | per ton           | 1  | 5 0      |
| " Sulphide (antimony slag) .. .. .         | "                 | 2  | 0 0      |
| Lead (sheet) for cash .. .. .              | "                 | 12 | 5 0      |
| " Litharge Flake (ex ship) .. .. .         | "                 | 14 | 10 0     |
| " Acetate (white " ) .. .. .               | "                 | 21 | 10 0     |
| " " brown " ) .. .. .                      | "                 | 16 | 0 0      |
| " Carbonate (white lead) pure .. .. .      | "                 | 16 | 0 0      |
| " Nitrate .. .. .                          | "                 | 19 | 0 0      |

|                                                            |              |    |  |
|------------------------------------------------------------|--------------|----|--|
| Lime, Acetate (brown) (ex ship) .. .. .                    | per ton      | 4  |  |
| " (grey) (ex ship) .. .. .                                 | "            | 7  |  |
| Magnesium (ribbon and wire) .. .. .                        | per oz.      | 0  |  |
| " Chloride (ex ship) .. .. .                               | per ton      | 2  |  |
| " Carbonate .. .. .                                        | per cwt.     | 1  |  |
| " Hydrate .. .. .                                          | per ton      | 17 |  |
| " Sulphate (Epsom Salts) .. .. .                           | per ton      | 2  |  |
| Manganese, Sulphate .. .. .                                | "            | 16 |  |
| " Borate .. .. .                                           | per cwt.     | 2  |  |
| " Ore, 70 % .. .. .                                        | per ton      | 3  |  |
| Methylated Spirit, 61° O.F. .. .. .                        | per gallon   | 0  |  |
| Naphtha (Wood), Solvent .. .. .                            | "            | 0  |  |
| " " Miscible, 60° O.F. .. .. .                             | "            | 0  |  |
| Oils:—                                                     |              |    |  |
| Cotton-seed .. .. .                                        | per ton      | 17 |  |
| Linseed .. .. .                                            | "            | 20 |  |
| Petroleum, American .. .. .                                | per gallon   | 0  |  |
| Stearine .. .. .                                           | per ton      | 23 |  |
| Phosphorus (yellow) .. .. .                                | per lb.      | 0  |  |
| " (red) .. .. .                                            | "            | 0  |  |
| Potassium (metal) .. .. .                                  | per oz.      | 0  |  |
| " Bichromate .. .. .                                       | nett per lb. | 0  |  |
| " Carbonate, 90% (ex ship) .. .. .                         | per ton      | 17 |  |
| " Chlorate .. .. .                                         | per lb.      | 0  |  |
| " Cyanide, 98% .. .. .                                     | "            | 0  |  |
| " Hydrate (Caustic Potash) .. .. .                         | per ton      | 24 |  |
| " " (Caustic Potash) 75/80 % .. .. .                       | "            | 20 |  |
| " " (Caustic Potash) 70/75 % .. .. .                       | "            | 19 |  |
| " Nitrate (refined) .. .. .                                | per cwt.     | 1  |  |
| " Permanganate .. .. .                                     | per cwt.     | 3  |  |
| " Prussiate Yellow .. .. .                                 | per lb.      | 0  |  |
| " Sulphate, 90 % (ex ship) .. .. .                         | per ton      | 9  |  |
| " Muriate, 80 % (do.) .. .. .                              | "            | 8  |  |
| Silver (metal) .. .. .                                     | per oz.      | 0  |  |
| " Nitrate .. .. .                                          | "            | 0  |  |
| Sodium (metal) .. .. .                                     | per lb.      | 0  |  |
| " Carb. (refined Soda-ash) 48 % .. .. .                    | nett per ton | 4  |  |
| " " (Caustic Soda-ash) 48 % .. .. .                        | "            | 4  |  |
| " " (Carb. Soda-ash) 48 % .. .. .                          | "            | 4  |  |
| " " (Alkali) 58 % .. .. .                                  | "            | 3  |  |
| " " (Soda Crystals) .. .. .                                | "            | 2  |  |
| " Acetate (ex-ship) .. .. .                                | "            | 14 |  |
| " Arseniate, 45 % .. .. .                                  | "            | 15 |  |
| " Chlorate .. .. .                                         | per lb.      | 0  |  |
| " Borate (Borax) .. .. .                                   | net, per ton | 19 |  |
| " Bichromate .. .. .                                       | per lb.      | 0  |  |
| " Hydrate (77 % Caustic Soda) (f.o.b.) net pr. ton .. .. . | "            | 9  |  |
| " " (74 % Caustic Soda) .. .. .                            | "            | 8  |  |
| " " (70 % Caustic Soda) .. .. .                            | "            | 7  |  |
| " " (60 % Caustic Soda) .. .. .                            | "            | 6  |  |
| " " (60 % Caustic Soda, cream) (f.o.b.) .. .. .            | "            | 6  |  |
| " Bicarbonate .. .. .                                      | "            | 6  |  |
| " Hyposulphite .. .. .                                     | "            | 6  |  |
| " Manganate, 30 % .. .. .                                  | "            | 16 |  |
| " Nitrate (95 %) ex-ship Liverpool .. .. .                 | per cwt.     | 0  |  |
| " Nitrite, 98 % .. .. .                                    | per ton      | 30 |  |
| " Phosphate .. .. .                                        | "            | 13 |  |
| " Silicate (glass) .. .. .                                 | per ton      | 4  |  |
| " " (liquid, 100° Tw.) .. .. .                             | "            | 3  |  |
| " Stannate, 40 % .. .. .                                   | per cwt.     | 3  |  |
| " Sulphate (Salt-cake) .. .. .                             | per ton      | 1  |  |
| " " (Glauber's Salts) .. .. .                              | "            | 1  |  |
| " Sulphide .. .. .                                         | "            | 7  |  |
| " Sulphite .. .. .                                         | "            | 5  |  |
| Strontium Hydrate, 100 % .. .. .                           | "            | 8  |  |
| Sulphocyanide Ammonium, 95 % .. .. .                       | per lb.      | 0  |  |
| " Barium, 95 % .. .. .                                     | "            | 0  |  |
| " Potassium .. .. .                                        | "            | 0  |  |
| Sulphur (Flowers) .. .. .                                  | per ton      | 6  |  |
| " (Roll Brimstone) .. .. .                                 | "            | 5  |  |
| " Brimstone: Best Quality .. .. .                          | "            | 3  |  |
| Superphosphate of Lime (26 % .. .. .                       | "            | 2  |  |
| Tallow .. .. .                                             | "            | 21 |  |
| Tin Crystals .. .. .                                       | per lb.      | 0  |  |
| " English Ingots .. .. .                                   | per ton      | 63 |  |
| Zinc (Spelter) .. .. .                                     | "            | 15 |  |
| " Chloride (solution, 100° Tw.) .. .. .                    | "            | 5  |  |



# THE CHEMICAL TRADE JOURNAL AND OIL, PAINT and COLOUR REVIEW.

Publishing Offices: 32, BLACKFRIARS STREET, MANCHESTER.

466.

SATURDAY, APRIL 25, 1896.

Vol. XVIII.

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## CURRENT TOPICS.

### THE INCANDESCENT LITIGATION.

THE string of actions that have been in progress during the  
past few weeks in connection with the Welsbach patents  
for the manufacture of incandescent mantles have been of a  
most interesting nature, and the most important of chemical  
cases since the trying of the cyanide patents.

In the present actions the substantial question to be settled  
was essentially a chemical one, and called for a careful dis-  
crimination of scientific evidence more than for the resolution  
of any knotty legal point.

The decisions in the cases of the De Mare and the Sunlight  
Companies are given elsewhere, and though apparently opposed  
to each other, are both more or less in favour of the Welsbach  
patents. The ruling on the defence set up that the plume of  
the De Mare patent was altogether a different thing from the  
Welsbach fabric or mantle is most conclusive, and prac-  
tically makes it impossible to produce an incandescent light  
as good as that obtained by the Welsbach process without  
infringing the patent.

As is general in such actions the defendants tried first to  
prove that the Welsbach patent was invalid, and then to  
show that there had been no infringement. On the first  
count the Court has emphatically upheld the validity of the  
pioneer patent, so that the matter becomes restricted to the  
question of infringement. In the De Mare case this point  
was settled in favour of the plaintiffs, the decision being deci-  
sive in every particular. In the Sunlight case judgment was  
in favour of the defendants, the Court holding that there had  
been no infringement.

The reasoning by which this conclusion was arrived at goes  
a long way, however, towards showing that it is very difficult,  
and at present practically impossible, to obtain the best  
results without invalidating your patent. His Lordship stated  
that he did not think much of the Sunlight (Dellwick's) patent.  
The opinion of a judge carries little weight on matters other  
than legal, it is true, but the whole tone of the judgment  
points to the above deduction.

Taking all things into consideration it does not appear  
probable that the question of patent rights will be finally and  
definitely settled for a considerable time to come—two or  
three years perhaps—but the benefits that will attend the  
De Mare decision will not be so long delayed. The Welsbach  
patent is now undeniably substantiated, and its most formid-  
able rivals will be restrained by injunction. At the same  
time, while benefiting thereby, there will also be a healthy  
stimulus in the existence of the Sunlight patent, thus avoiding  
the constitution of an entire monopoly which is unwholesome.

Apart from the main issue, there is, however, a very strik-  
ing lesson to be learned from these actions regarding expert  
evidence. We have long contended that the correct rôle of  
the scientific expert is that of counsellor and referee, and h<sup>1</sup>



right position that of Court delegate, as opposed to the present position of a witness paid to give evidence, either for or against. The present arrangement makes it practically impossible to obtain the best and most impartial expert opinions except in those cases where the stake is a large one and the litigants are wealthy. Now that the pressure of cases has made it necessary to consider the advisability of making an addition to the judicial Bench, the element of time in the hearing of cases becomes as important to the legal fraternity as to the unfortunate litigants. There can be little room for doubt that if a change in the method of taking expert evidence was made, a great saving in time would result, apart from the fact that the prolonged cross-examination of experts by men who have a distinctly legal, rather than a chemical bias, is by no means always conducive to the elucidation of "the truth, the whole truth, and nothing but the truth." The chief difficulty our worthy judges apparently have to contend with in these cases is that of extracting the truths that bear on the case from the confusing mass of irrelevant statements with which they are surrounded. Would it not be far better for their lordships to be able to take advice on such points first hand? By the present system the skein is skilfully tangled during a hearing of several days duration, and then their lordships "reserve judgment" so that they may have time to disentangle it again.

#### FACTORY INSPECTION AND INSPECTORS.

The comparatively recent appointment of lady factory inspectors was generally looked upon as a step calculated to benefit those inspected and the employes, but the case that came before the Burnley Police Court last week, will not create a very favourable impression of these lady inspectors in the mind of the public.

Miss Anderson, it appears, has been appointed ten months, and this was her first prosecution. Her complaint was that the sanitary accommodation at a certain mill was inadequate, and in spite of notice no remedial measures were being adopted. Her statement was supported by the sanitary inspector, and we shall not presume to adjudicate in this matter, although the testimony of Dr. Harwood was directly opposed to that of the sanitary inspector and Miss Anderson. The point with which we are concerned is not the actual rights or wrongs of the case, but the anomalous position in which the lady inspector found herself when cross-examined. Mr. Roberts, for the defendants, stated that he was going to call experts, who held sanitary diplomas, and asked Miss Anderson if she had a diploma of sanitary science. Her answer was no, and she practically gave a negative answer to the query whether she had any sanitary diploma. When asked what means she used to ascertain that there was any effluvia, she merely stated that she visited the rooms. Since 1878 there have been plenty of inspectors in Burnley, but it was only after the appointment of this lady that exception was taken to the effluvia complained of. As several witnesses were called who denied the existence of any effluvia, and one of these witnesses held the sanitary science diploma of the University of Cambridge, the position of the Government representative was somewhat embarrassing.

We are fully alive to the fact that the mere acquisition of a sanitary science diploma counts for little against practical experience, but Miss Anderson unfortunately has only had a few months in which to acquire anything like an extensive practical knowledge. We have no doubt that Miss Anderson's appointment, in particular, was made on a satisfactory foundation, and that her qualifications were good, but we

think that for her own sake she must now wish that she had been armed for her task with the same weapons with which she is now being attacked. In a sense they are not very formidable ones, but in the present case they were sufficient to give the Philistines the advantage.

Quite independently of Miss Anderson's qualifications, it would appear from the foregoing that lady inspectors should in future hold some sanitary diploma. Whatever their qualifications may be, and however manifest their peculiar fitness for their task, they will occasionally have to contend in public with opposition from those they have to inspect. In so doing they will be confronted with those who can claim a right to speak on matters of sanitary science, and if their inspection is to count for anything the inspectors themselves must be in a position to establish an equal right to speak authoritatively.

#### THE FOOD ADULTERATION INQUIRY.

There have been a good many food adulteration inquiries, but the last one that has been made promises to do more than all the rest put together. The Select Committee are now busy considering their report, which will in all probability be rather startling. The chief good that has resulted has been the recognition of the fact that the present penalties are altogether useless, and it is encouraging to learn that the report will, it is anticipated, propose imprisonment without the option of a fine as the penalty for a second offence. This is not all, however, for the convicted party will have to publish his conviction in a conspicuous notice on his own premises. This additional condition may be thought superfluous, but, after all, why should it not be so when very much the same sort of thing is done with those thoughtless people who will persist in entering trains whilst in motion, or travelling without a ticket? There is frequently no intention to defraud, which is more than can be said about the majority of margarine prosecutions. If this change alone can be effected, there will be a great improvement in the quality of "butter."

The other projected recommendations refer to the better enforcement of the Food and Drugs Act, the testing of foreign butter as it comes into this country, and the appointment of a board of competent chemists to deal with doubtful cases. It is also probable that certain suggestions will be made concerning the colouring of margarine and butter.

The report, therefore, promises to be a satisfactory and helpful one. So far so good—very good indeed. The next thing is to give effect to the recommendations. All we can do is to hope for the best, and to urge upon the members of the committee the need for sustaining their vigilance, so that their labours may not be bilked in the same way as the work of the Petroleum Committee of 1868 was frustrated by the subsequent intervention of trade influences.

ONE MODE OF DEALING WITH AN INDUSTRIAL CRISIS.—The British Consul-General at Warsaw, in a recent report on the trade of his district, states that the sugar industry of the kingdom has again undergone a crisis similar to that of 1886-7, from which it was temporarily rescued by the Kiew syndicate. All arrangements for limiting the production and exporting the surplus seem to have ceased to be effective, and accordingly the Government took the matter in hand. At the end of last year a decree was issued providing that for three seasons—1895-8—the Minister of Finance is to fix the amount to be sold for home consumption, the stock to be kept in reserve, and the maximum price for the home market. The surplus to be manufactured beyond the amount fixed for home consumption is also to be settled by the Minister of Finance for each factory in accordance with its size, and when this surplus reaches 19,340 cwt., it is to be charged with an additional excise of nearly 10s. per cwt. Finally, the whole amount of the original and additional excise duty is to be returned to the factory on as much of the surplus as is exported to foreign countries.



## The Patent List.

This list is compiled from Official sources in the Manchester Laboratory, under the immediate supervision of E. Davis and Alfred R. Davis, who report professionally on the value of Chemical Patents.

### NOTIFICATIONS FOR ENGLISH LETTERS PATENT.

Consuming Furnaces. T. Brook. 7,332. April 7.  
 for Extracting Oils, etc., from Seeds. W. R. Harrison and E. Mason. 7,379. April 7.  
 of Zinc from Refractory Ores. H. R. Angel. 7,447. April 8.  
 ment in the Treatment of Bay Salt. A. MacNab. 7,464. April 8.  
 Production of Pigments. P. Cannel-Bunn and W. Barrett. 7,537.  
 of Mixed Gases by Refrigeration, and more particularly for separating Oxygen from Air. W. Hampson. 7,559. April 9.  
 and Using the Products of Combustion. A. Guasco. 7,624.  
 in Cloths for Filter Presses. A. J. Boulton. 7,718. April 11.  
 and Disinfecting Drains. C. T. Kingzett. 7,721. April 11.

### ABSTRACTS OF LATEST COMPLETE SPECIFICATIONS.

Abstracts are specially prepared for the Chemical Trade Journal. Rights of publication are reserved. This is the earliest abstracts of Chemical and allied patents accessible to the

or Improved Process for the Treatment and Refining of edible Oils During or Subsequent to their Expression from Beans, Seeds, and the like. G. Mitchell, 47, Victoria-street, London, S.W. Eng. Pat. 9,157. May 8, 1895.

oils, notably castor oil, have a very unpleasant odour and rough extracted from seeds which have a pleasant flavour. tributed (and apparently correctly) to the combined action of and moisture, which causes the oil to ferment. With a view of getting this oil by this invention treated in a vacuum.

is conducted in the following fashion:—The oil from the which is generally open to the air but can be made so that the pressed into a vacuum chamber, is drawn by reduced pressure filter into a series of partially-exhausted vessels in which the essent is removed by the vacuum. The refined oil is then sucked into the bottling apparatus, from whence it is charged es from which the air has been exhausted, and is ready to be

The vessels in which the natural moisture is removed are l to the exhaustor by an independent pipe so disposed that the when once liberated cannot drop back into the oil. A special igned to facilitate the execution of this process is described in o. 16,259/92, while the bottling apparatus is of the same type ferred to in the application for Letters Patent, No. 9,155/95.

nents in the Fixation of Nitrogen and the Production of des. T. Twynham, Elmhurst, Egham Hill, Egham. Eng. Pat. 9,332. 1895.

ent of nitrogen, passed over carbon and an alkaline carbonate, temperature, forms an alkaline cyanide. The difficulty, how- been to obtain sufficient oxygen-free nitrogen suitably heated, pe with the extraordinarily heavy wear and tear on the plant, e external heating. These difficulties are met in the following —The nitrogen is obtained from the waste gases escaping from er converter. The gases after the carbon period and up to efore the drop of the flame can be used. In the preparation of d, however, the gases can be used until about the middle of the w. Such gases are passed through a refractory basic-lined ked with coke moistened with carbonate of soda or potash. neous heat is used, as the coke soon becomes heated by the hich are passed during several successive "blows" until cyanide is formed. The cyanide can be removed with water, nia can be formed at once by aid of the action of steam and air, case the alkaline base largely remains in the stack ready for In any case, however, it is advisable to place a condensing ent at the end of the shaft to retain any volatile cyanide at otherwise escape

nents in Treating Chlorides for the Production of Chlorine and es or Alkaline Earths, and the Recovery of Bye-products. in, Ardeer Cottage, Stevenson, Ayrshire, and W. Donald, Canal-street, Ayrshire. Eng. Pat. 10,713. May 30, 1895.

parts of salt and manganic oxide are treated with enough d of 68°Tw. to decompose the salt. Chlorine with a small proportion of moisture is given off, leaving a mixture of nitrates and manganese, water, and free nitric acid. This mixture is ed and roasted, the nitrates being converted into nitrogen and finally into nitric acid by subsequent treatment. The

resulting compound of soda and manganese is dissolved, while hot, in water, and oxidized with air. When the reaction is complete, the caustic soda solution is removed, and prepared for market in the usual way, while the peroxidized manganese is used over again. Other suitable chlorides and oxides can be used, and in case the caustic alkali may not be as soluble as that of soda, the roasted residue can be oxidized by hot air. The chlorine is generated in an ordinary stone still, and the evaporation and roasting can be conducted in a furnace of the muffle salt cake type.

Improvements in Treating Nitrates for the Production of Nitric Acid, and the Recovery of Bye-products. R. Main, Ardeer Cottage, Stevenson, Ayrshire, and W. Donald, Canal-street, Saltcoats, Ayrshire. Eng. Pat. 73,819. Dec. 12, 1895.

A mixture of nitrate of soda and manganic oxide, in proportions depending upon the purity of the nitre, is roasted in a muffle furnace. The evolved oxides of nitrogen mixed with air are passed into a trickling tower and converted into nitric acid. To obtain the latter of high density, the acid from the oxidizer is mixed with enough vitriol to combine with the water present, and the whole distilled at a regulated heat. The nitric acid comes over first and is collected. Next the water can be driven off, leaving the vitriol fit to be used afresh. The furnace product, consisting of soda and manganous oxide, is treated with steam and water to extract the soda, and blown with air to reoxidize the manganese. The hydrate of soda is worked up in any suitable fashion.

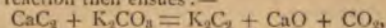
An Improved Process for Obtaining Acetic Acid from Pyroligneous Salts. W. P. Thompson, 6, Lord-street, Liverpool, etc. (communicated by Dr. Carl von der Linde, 192, Uerdingerstrasse, Crefeld, Germany). Eng. Pat. 3,987. February 21, 1896.

The production of acetic acid by decomposing pyrolignite of lime with acids and distilling does not yield pure acetic acid, especially when vitriol is used in the decomposition of the pyrolignite of lime. By decomposing with acids and then distilling *in vacuo* a pure product results. The higher the vacuum the better the acid, as acetic acid boiling at 119°C under ordinary pressure boils at 60°C. *in vacuo*. By thus lowering the temperature of distillation the decomposition of the tar spirit and oils mixed with the pyrolignite are prevented, and the distillate obtained free from all foreign admixtures

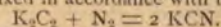
Improvements in the Manufacture or Production of Cyanogen Compounds. A. von Rad and J. Rosenfels, both of Ptersee-Augsburg, Bavaria. Eng. Pat. 1,022. January 15, 1896.

This invention is practically another solution of the difficulties set forth in patent 9,332/95 when preparing cyanides from nitrogen gas, carbon, and an alkaline carbonate.

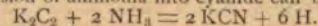
In this instance suitable carbides are used. Thus by passing nitrogen over barium or calcium carbide, cyanide is formed at a red heat instead of a white heat as by the old method. A more economical method is to treat the calcium carbide with carbonate of potash. It is probable that the following reaction then ensues:—



the  $\text{CO}_2$  being reduced to CO by excess of carbide. The nitrogen, it is assumed, is therefore fixed in accordance with the equation



The direct conversion of ammonia into cyanide can be similarly accomplished:—



The advantages claimed for this carbide method are that only a red heat is necessary. When using ammonia almost the theoretical yield is obtained. In making ferro-cyanides pure materials can be used, thus keeping out disturbing elements, and soda can be substituted for potash.

TYLDESLEY SEWAGE SCHEME.—The new system adopted by this District Council, and executed at a cost of about £3,250, will be inaugurated to-day (25th instant). The works have been designed to treat 300,000 gallons of sewage daily. The process is that of the Magnetite Sewage and Water Purification Company, of Manchester. Under this system the sewage is carried on to filter-beds composed of layers of "magnetite," a kind of ironstone, with a top layer of sand, a filtering medium which has been patented by this company. These filter-beds are self-regulating, and the top layer of sand is cleansed by the simple process of reversing the flow of one filter and allowing it to force itself upwards through the next filter. The floating matter, lifted from the top of the sand, then runs into a well, and is thence pumped into "detritus tanks." After leaving these tanks, the precipitant is added to the sewage by means of a Keirby mixer, worked by a water-wheel turned by the flow of the sewage. The cleansed sewage then passes through a "mixing race" to the inlet channels, and to the precipitation tanks, which are of quite novel design. The tanks have been constructed with concrete bottoms, with walls faced with salt-glazed brick. There are eight filter-beds, each 35ft. by 16ft. The precipitant used is "elite," principally alumina, iron, and oxide of magnesium.



## Official Memoranda,

(From the Board of Trade Journal.)

### CUSTOMS TARIFF OF GUATEMALA.

The following is an abstract of the recent changes in the customs duties of Guatemala:—

|                                                                                            | per kilo. | dols. cents |
|--------------------------------------------------------------------------------------------|-----------|-------------|
| Refined Salt, ground, in any package, gross weight                                         |           | 0 06        |
| Acetate of copper.....nett weight                                                          | "         | 0 30        |
| Bicarbonate of Soda, with weight of package....                                            | "         | 0 10        |
| Prussian Blue.....nett weight                                                              | "         | 0 25        |
| Creosote.....                                                                              | "         | 2 00        |
| Hypophosphites and Phosphites of Lime, Ammonia, Iron, Potash, or Soda.....nett weight      | "         | 4 00        |
| Indigo.....                                                                                | "         | 0 20        |
| Nitrates of Ammonia, Baryta, Strontia, Iron, Copper, Lead, and Zinc.....nett weight        | "         | 0 30        |
| Nitrate of Silver, crystallised, fused, or mixed with other Nitrates.....nett weight       | "         | 16 00       |
| Disinfecting Powders.....gross weight                                                      | "         | 0 50        |
| Sulphate of Alumina, and Alums of Copper, Iron, Magnesia, and Soda, with weight of package | "         | 0 06        |
| Turpentine.....gross weight                                                                | "         | 0 01        |

### TARIFF OF BRITISH INDIA.

The following articles have been freed from duty when imported into British India:—

Aniline blue, bisulphate of soda, china clay, chloride of magnesium, chloride of Zinc, Epsom salts, farina, Glauber salts, glutina, glycerine substitute, hoop iron, rivets for bales, sizing paste, sizing wax, soda ash, and starch.

### WEST AUSTRALIAN TARIFF CHANGES.

Under the recent Customs Duties Repeal Act the duty on the under-mentioned articles has been repealed.

|                                  |                                                      |
|----------------------------------|------------------------------------------------------|
| Galvanised Iron                  | Paraffin Wax                                         |
| Lead—sheet, scrap, pig, and foil | Sheep Dip                                            |
| Molasses                         | Sulphur                                              |
| Mineral Oil                      | Zinc, ingots, and sheets, either plain or perforated |

### TARIFF DECISIONS.

#### THORIUM SALTS.

The French Customs authorities have made the following announcement—"Thorium salts, especially nitrate, solutions of which are employed in the preparation of incandescent gas-burners, belong to the class 'Chemical Products not denominated, other than of an alcoholic basis,' and pay a duty of 5 per cent. *ad valorem*. The estimation of the value of these products having given rise to many disputes, the Departments of Trade and Finance have decided to convert the duty of 5 per cent. into an equivalent specific rate, and considering that the value of thorium salts, once 2,000 frs. per kilogram, is now only about 400 frs. on account of recent discoveries of extensive deposits of thorium ore, it has been decided to substitute for the duty of 5 per cent. *ad valorem*, a specific rate of 20 frs. per kilogram.

#### UNITED STATES DECISIONS

*Scrap mica*, consisting of pieces of mica of irregular shape, varying in sizes from 2 or 3 inches square to areas still smaller, is dutiable at 20 per cent. *ad valorem* as mica under paragraph 1673½.

*Calcined magnesite*, or furnace cement, is dutiable at 10 per cent. *ad valorem* under paragraph 79 as "cement" other than Roman, Portland, or hydraulic cement.

*Asbestos fibre* is entitled to free entry as asbestos in an unmanufactured state under paragraph 388.

*Crocus* is to pay duty as a colour at 25 per cent. under paragraph 61, Act of October, 1890.

### THE BOMBAY SALT TRADE.

According to the report on the administration of the Bombay Salt and Continental Customs Department for the past year, the 1894-95 salt season was generally favourable for manufacture throughout the Presidency; the number of works was increased, and the works at Sanikatta were reopened with improved arrangements for storage. At the Runn works the quantity of salt manufactured and brought to account was, with the exception of one year, the largest on record by our lakhs of maunds. The most marked improvement was, however, in the Konkan works, where the previous year's figures were improved

on by 35 per cent. At Kharaghoda, it is shown, experiments were continued for the purpose of discovering fresh sources of supply, and resulted in a substantial addition to the known brine-yielding area while the whole of the ground was surveyed and demarcated with view to the elaboration of a scheme for the systematic development of the works. The Imperial revenue under salt increased by close upon 18 lakhs in the year, a fact which is attributed to the growth of the issues from all works in the Bombay Presidency, to larger imports from Goa, and also to some extent to an increase in the duty recovered under the credit bond system on salt issued in the previous year. Meanwhile charges were the same, and the expense of working unaltered.

### UTILISATION OF WATER POWER IN NORWAY.

The *Engineering and Mining Journal* states that the estate of Hafslund, near the great waterfall known as the Sarpsfos, between Christiania and Göteborg, has been acquired by a syndicate, chief consisting of German and American capitalists, for the sum of 800,000 kroner. The purchasers intend to form a large company, with capital of 3,000,000 to 5,000,000 kroner, in order to utilise the water-power of the falls for electrical force, and establishing aluminium works on the same principle as those now being constructed at the falls of Foyers, in Scotland. The Sarpsfos is one of the finest falls south-eastern Norway, being 74 ft. in height and 116 ft. in width. The water power is already utilised, however, by numerous sawmills, cellulose factories, and the railway crosses the fall, so that the proposed new works will probably not interfere to any great extent with the artistic aspect of the place.

### INDIA-RUBBER FROM THE SOUDAN.

A despatch has been received from Colonel A. H. Maclean, British Vice-Consul at Dakar, Senegal, enclosing a table showing the values and description of certain balls of india-rubber submitted to Monsieur Sampaïn, President of the Chamber of Commerce of St. Louis, for examination.

These specimens of india-rubber were received from the Soudan by the Governor-General of "Soudan-Senegal" on his return from the Soudan.

In order to encourage the cultivation of plants producing india-rubber this substance is now received in payment of taxes in the districts mentioned in the report.

The table can be seen on application at the Commercial Department, Board of Trade, 7, Whitehall Gardens, S.W., between the hours of 11 and 5.

## Legal Intelligence.

### HIGH COURT OF JUSTICE.

#### QUEEN'S BENCH DIVISION.

(Before Mr. Justice Wills, without a Jury.)

THE INCANDESCENT GAS LIGHT COMPANY (LIMITED) v. DE MARE INCANDESCENT GAS LIGHT SYSTEM (LIMITED).

Judgment was given in this case last week. The plaintiffs complained of threatened infringements by the defendants of letters patent granted to Carl Auer von Welsbach for the manufacture of an illuminant appliance for gas and other burners, being No. 15,286 of 1885.

Mr. Moulton, Q.C., Mr. T. Terrell, Q.C., Mr. A. J. Walter, and Mr. J. H. Gray appeared for the plaintiffs; Mr. Bousfield, Q.C., Mr. Wallace, Q.C., and Mr. Jenkins for the defendants.

Mr. Justice Wills, in the course of an elaborate judgment, said it had long been known that certain substances, notably lime, magnesia, and zirconia, when subjected to the heat of a flame of mixed coal gas and air will produce a brilliant incandescence. The common oxyhydrogen lime light is well known. Zirconia had been used, on a very small scale, in the same way, and the illuminant properties of magnesia were also well known. Many attempts had been made to utilise their properties by introducing such substances into the flames of gas, or of gas and air mixed, but they had all for one reason or another come to nothing. I am not going, said his lordship, to enter at present into questions of anticipation; but it is quite safe to say that for all practical purposes Welsbach discovered a practical and simple method of arranging oxides to be rendered incandescent in a shape which made it possible to use them in burners, and also discovered that a class of substances which for convenience and brevity are generally spoken of by chemists and throughout the hearing of this case have been called "rare earths," would afford at once the necessary illumination and the necessary coherence. The process adopted by Welsbach begins by taking a fabric made of cotton of suitable pattern and proceeds to impregnate it with salts of the blends of oxides of lanthanum and zirconium, or of those with oxide of yttrium, and then ammoniates it. The result of



ing is to get the salts into every minutest portion of the fibres, so that when finally the cotton fabric itself is eliminated there may be left a solid substance occupying almost the very space now filled by the impregnated fabric. The result of this is to convert the salts into hydrated oxides, filling, as did the innermost recesses of every portion of the fabric. The hood is not yet fit for permanent use in the burner. The last operation is to place the hood in the burner and set on fire by lighting.

This process drives off all the water of the hydrated oxides and leaves them in their final condition of anhydrous oxides, in which they perform the business purpose of giving illumination of incandescence. The claim made by the patentee is the combination of the essential elements in the process described. If the process is as the defendants held out they were going to use is substantially the same with this process, they are liable in this action. Several objections have been taken to the patent. First it is said that the invention was not the proper subject of a patent, with reference to what was new, and was not novel. In my opinion these objections are wholly ill-founded. The invention, with improvements which had followed in its train, has undoubtedly created a great new industry not only in the caps or hoods which are the subjects of it, but in the extraction of the oxides and salts of the rare metals. The globe has been supplied for new sources of supply. The invention has for the first time brought within the range of practical manufacture the production of a brilliant light by incandescence within an ordinary gas flame. It appears to me to be no ground whatever for the attack made on the patent on the score of want of novelty. The field upon which it has entered was untrodden and marked only by the absolute failure of every attempt to penetrate it. It is next set up that the invention is not useful—a singularly hopeless contention. An attack was made on the patent in respect of the direction in the specification to use the mantle before burning it; a direction which, it was said, under some conditions not excluded by the specification, would be the mantle, which will in such cases fall to pieces. I am satisfied by Mr. Ballantyne's evidence that careful washing is the ordinary method, and that he has found no difficulty with a washing even less than would be ordinarily applied, and that the defendants' objections are due to the fact that they did not reasonably cleanse the mantle. This ground of objection to the validity of the patent fails. The next ground of attack is that the proportions of the ingredients are wrong, and no directions are given as to the strength of solution, and that a competent workman would need other directions. The proportions actually given are right and work well. I am satisfied with the evidence of the plaintiffs' witnesses that the want of a direction as to the strength of the solution would have presented to a man competent to do this class of work a real difficulty. Excellent hoods were made by persons at the defendants' acquainted with anything but the Welsbach specification. As to the question of infringement it is clear that the defendants intend to make and (or) sell in this country plumes for incandescent lamps, which consist of a number of threads tied on to a platinum wire and so as to form a sort of fringe, all the threads of which are very closely together while they are strung on to the wire, but to separate as they leave it, so that the apparatus looks like a fan's small handbrush, the cross sections of which would take the shape of a fan. This plume is then to be dipped into a solution of preferably of one part of sulphate of magnesium, two parts of erbium, and two parts of sulphate of zirconium (all highly pure) in 25 parts of water. The plume may be dipped into a varnish for the sake of strength, and is then to be suspended in the flame of a gas-burner to produce incandescence. More than 100,000 specimens delivered by the defendants as specimens of what they claim to make were found to consist of oxide of zirconium 84 per cent., of yttrium sub-group 9 per cent., and oxide of magnesium 16 per cent. Welsbach's limits of proportion are very large. Enough to satisfy me that, unless the omission of ammoniation, the omission of lanthana, and the variation in the form of the illuminant are prevented, the defendants were about to infringe, and ought to be restrained. The plume is, in my opinion, a fabric. Welsbach's invention gave undoubtedly a perfectly new result, and in every respect to be described as a "pioneer" invention. His specification describes the whole process by which he arrived at that result. Out of it the defendants take the impregnation of the fabric by blends of salts of the rare earths, and the reduction of these to anhydrous oxides. I am satisfied by the evidence that it is this mode of getting the specified oxides into the shape of the fabric out of which has been made that has rendered the process of any use, and that any variation of prescription, extending even to the omission of the ammoniation, is of very little consequence in comparison. The only result of the omission of the ammoniation is that you get the same result by as you get by two if you ammoniate the fabric. This is strictly a chemical equivalent perfectly well known at the date of the invention and can have no bearing upon the question of infringement.

The plume is, no doubt, a form of appliance suited to a batswing burner, to which the Welsbach cap or hood would be inapplicable. Welsbach, however, points out that the form and construction of the fabric may be varied to suit different burners. The substance of Welsbach's invention, as described in his specification, is, in my opinion, appropriated by what the defendants are proposing to do; and I, therefore, give judgment against all the defendants upon all the issues, with costs, and grant the injunction prayed for, and I certify, pursuant to section 31 of the Patents and Trade Marks Act, 1883, that upon the trial of this action the validity of the letters patent granted to Carl Auer Von Welsbach, No. 15,286, dated the 12th of December, 1885, came into question; and I further certify, pursuant to section 29 of the same Act, that at the trial of this action the plaintiffs proved the particulars of breaches delivered by them. The shorthand notes of the evidence, costly as they must be, have greatly abridged the length of the trial, and have been a saving of expense, and the notes and printed transcripts must be allowed.

Judgment accordingly, with liberty to apply upon certain questions as to the scale of costs, and as to whether solicitor and client's costs are to be allowed.

THE INCANDESCENT GAS LIGHT COMPANY (LIMITED) v. THE SUN-LIGHT INCANDESCENT GAS LAMP COMPANY (LIMITED) AND OTHERS.

In this case the plaintiffs complained of an infringement and threatened infringement of the patent of 1885 to which the De Mare case related.

Mr. Moulton, Q.C., Mr. Terrell, Q.C., Mr. A. J. Walter, and Mr. J. H. Gray appeared for the plaintiffs; Mr. Bousfield, Q.C., Mr. Wallace, Q.C., Mr. Jenkins, and Mr. Emery for the defendants.

Mr. Justice Wills, in giving judgment, said—The defendant company was formed to work a patent granted to one Dellwik. The defendants take the idea of the skeleton hood produced by the Welsbach process, but make it of about 50 to 60 per cent. of alumina, about 30 per cent. of zirconia, and then coat this with a thin coating of oxide of chromium. It seems to me that this is essentially different from what is claimed by the Welsbach specification. Welsbach might have claimed the hood made of any materials, but that would have entirely altered his patent and would have exposed it to a fresh set of dangers. He might have claimed the hood, of whatever material, applied for the purpose of illumination, but that would again have altered his patent and have made it void, for it would have been a patent for the use in the form of a hood of whatever substances would answer. But he did claim nothing of this kind. The use of the rare earths is beyond all doubt of the essence of his invention. He could not by any adaptation make a strong groundwork of alumina, or alumina and zirconia, and then spray it or saturate it with the salt of an illuminant oxide to be reduced to the oxide on putting it into the flame, which is what the defendants have done. It was a necessary consequence of the nature of Welsbach's process that his skeleton should be absolutely homogeneous throughout. I feel that the defendants are taking a very valuable process bodily from Welsbach without any remuneration; but that is the necessary fate of a patentee who confines himself to claiming the aggregate of a whole string of processes of which this is one. The fatal difficulty in this case is that the formation of a Welsbach skeleton by other means and of other substances than those pointed out in the specification is not claimed. No use is made by the defendants of any of the rare earths, and their choice of substances and their method of applying the illuminants appear to me to be as far asunder as the poles from that contemplated by Welsbach. I must therefore give judgment for the defendants upon the issue of infringement.

Judgment for defendants, with the liberty to apply upon certain questions as to costs.

THE COST OF CALCIUM CARBIDE.—Up to now the chief interest concerning calcium carbide as a source of acetylene has centred around the question of cost, as upon that practically everything depends. So far the figures and statements that have been put forward have not been over accurate, and have mostly revealed the fact that the authors have been guessing a good deal. Our enterprising American contemporary, *Progressive Age*, says:—"Recognising the importance to the world of artificial lighting, of full, accurate, and reliable information, we determined if possible to conduct at Spray (N.C.) a series of exhaustive tests which should show beyond refutation the cost of carbide of calcium." In carrying out their intention permission was obtained from the Electro Gas Company for a party of chemical and electrical experts to have sole charge of the Company's works for a week, during which to make a series of thorough and impartial tests, to determine accurately the cost of production. Professor Houston and Dr. Kennelly are representing the electrical interests, and Dr. Kinnicutt, of the Worcester Polytechnic Institute, the chemical aspect of the question. The results of the inquiry will be published in due course.



## Parliamentary Gossipings.

### GERMAN COMPETITION IN COAL.

In the House of Commons, on Monday,

Sir Howard Vincent asked the President of the Board of Trade if he was aware that arrangements were being made to bring considerable and increasing quantities of Westphalian coal to London, in flat-bottomed boats, loading far up the Rhine, at an inclusive land and water freight of about 6s. a ton, owing to the nominal rates charged by the German State Railway, for the development in England of German industry; and if he would cause this new source of practically subsidised foreign competition to be carefully watched, that the British coal-mining industry might take such steps as were possible to meet it.

Mr. Ritchie said he had no special information on the subject, but he would be happy to make inquiry through Her Majesty's Consul at Dusseldorf.

### THE PROTECTION OF INVENTORS.

In reply to Sir J. Leng,

Mr. Ritchie said the full address of every applicant for a patent was published for about seven months in the illustrated official journal. No means existed of ascertaining if any and how many inventors were precluded from opposing applications made by persons to whom they had communicated their ideas, but whom they could not trace in the address of a patent agent. There was no reason for apprehending there were many such cases, and he did not propose to alter the present procedure.

### THE METRIC SYSTEM.

Mr. Arnold-Forster asked the First Lord of the Treasury whether, in view of the fact that the metric system of weights and measures had recently been adopted by Turkey, Russia, and Japan, and was now in use in all the civilized countries of the world with the exception of the British Empire and the United States, and in view of the fact that metric measurements had already been adopted with respect to the ton and for all purposes of pharmaceutical dispensing in the United States, the Government would take immediate steps to give effect to the practically unanimous recommendation of the Committee on the Metric System, with the object of placing this country on a level with other civilized nations in the matter of weights and measures?

Mr. Balfour replied that the recital of the facts given in the question was, he believed, correct. It was not yet, however, within the range of practical politics, in his opinion, to impose by law on the inhabitants of this country so great a change as would be involved in giving effect to the recommendations of the committee.

Mr. Arnold-Forster: Is the right hon. gentleman aware that a Bill for this purpose has been introduced in the House of Representatives in the United States?

Mr. Balfour: I believe that is so. It is not passed into law yet.

## THE MINERAL OIL INQUIRY.

CONTINUING his evidence before the Select Committee of the House of Commons, last week, Mr. A. Spencer stated, in reply to the chairman, that the statistics of lamp accidents in London showed that, while in 1866 19 such accidents were reported, the number had gone on increasing until last year a total of 473 was reached. The deaths from this cause increased from 1 in 1874 to 23 in 1895. In all these cases fire ensued, and the brigade were called out to extinguish it. The figures just given did not give the total number of petroleum accidents, because it was well known that there were numerous small fires occurring daily to which the brigade were not called. He was informed by the representatives of the insurance companies that the number of these small fires outnumbered those to which the brigade were called, and that at least half of them were caused by petroleum lamp accidents. Assuming that there were 3,600 small fires in London last year, nearly 2,000 would have been caused by lamp accidents. In Germany the number of lamp accidents was less numerous than in this country, because, although cheap, dangerous lamps were largely made and exported thence, they were not much used in Germany. The London County Council were of opinion that the sale of dangerous lamps should be entirely prohibited. All the oils causing accidents were above 73deg. Fahrenheit flash-point, and in one case the flash-point was as high as 110deg. He suggested, therefore, that this should be raised to 120deg. In his opinion, safety could practically be secured either by burning oil of a sufficiently high flash-point, 120deg or more, or by burning the oils now in ordinary use in properly constructed safety lamps. The witness, by way of illustration, produced a number of lamps which he described as respectively dangerous and safe. The former were generally made of glass reservoirs, were sold retail at prices ranging from 1d. to 10½d. and 1s. 9d., and were in common use among the poor. Safe lamps, on the other hand, were generally constructed of metal reservoirs.

There were many lamps, with the exception of the burners, made exclusively of glass, some of them very expensive, which were in use in all classes of society and which under certain conditions were dangerous. There was no way of stopping the use of the large number of lamps already manufactured and on sale in actual use in private houses, but, as a practical method of preventing the sale of dangerous lamps, he suggested that the Secretary of State should have power from time to time to issue an order declaring that after a certain date it should be unlawful to make, expose, or offer for sale any lamp or other appliance intended to be used for the burning of mineral oil for purposes of illumination unless it was constructed in accordance with the prescribed specifications, and any person making or exposing for sale any lamp or other appliance not so constructed should be liable to a penalty not exceeding £5. That would make the Home Office the sole arbiter as to the classes of lamps which should be allowed to be in use throughout the country.

## SOCIETY OF CHEMICAL INDUSTRY.

### NOTTINGHAM SECTION.

THE usual monthly meeting of the local section of the above society was held on Wednesday evening, the 15th inst., at the Mechanics' Institution, Derby, when members in a greater number than the average attended to hear a paper from Mr. John White, F.R.C.S., the county analyst. Amongst those present were Miss Ashwell, Mr. Firth, and Mr. Wood (hon. sec.), from Nottingham; Mr. Lott and others from Burton-on-Trent; and amongst the visitors from Derby were Dr. Greaves and Mr. C. D. Hart, the town members being represented by the chairman (Mr. Carulla), and Messrs. Archbutt and C. Taylor, C.E. The subject of Mr. White's paper was "Filtration and Domestic Filters." During the course of the address it was made clear that we have entered into a new era as regards the question of obtaining a safe water supply for domestic purposes, and that the reliance with which a great number of filtering appliances are received by the public is thoroughly misplaced. Although the use of sponge has long ago been abandoned as most objectionable for house filters, there are still in use other filters that our recently acquired bacteriological knowledge condemns. Mr. White exhibited numerous forms of domestic filters, experimenting with some by passing through them a mixture of milk and water, a clear fluid quite free from any turbidity being obtained in the case of the Whitman filter, which consists of a specially prepared carbon dish. The Berkefeld and the Pasteur-Chamberland, which consist of hollow candles made of unglazed porcelain, through the pores of which the water has to pass when being filtered, are also capable of sustaining this severe test. A very interesting account was also given in the paper of the examination made by Messrs. Woodhead and Wood of 35 various forms of filters that were before the public, with a view to ascertaining their power to arrest the passage of disease-bearing germs. The porcelain candle filters, such as the Pasteur-Chamberland, now in compulsory use in all the public schools of France, were the only ones that came out satisfactorily from this test. A discussion followed, in which Dr. Greaves, Mr. Wood, Mr. Lott, Mr. Archbutt, and the Chairman took part. Mr. White, in his reply, said, in answer to a question from the Chairman, that he did not think we had reached the acme of filtration. Replying to Mr. Wood, who thought the milk test a most severe one, he could not say what the exact size of the milk globules were, although they were certainly smaller than bacteria. He acknowledged his indebtedness to Mr. Archbutt for calling his attention to the investigations of Drs. Woodhead and Wood, which were not sufficiently known amongst chemists, who were frequently called upon to give advice on the subject. On the motion of the Chairman, a hearty vote of thanks to the lecturer was carried by acclamation, and the proceedings terminated.

## RECENT CHEMICAL PROGRESS.

IN the course of a lecture on this subject given last week at the Royal Institution, Professor Dewar, F.R.S., commented on the great future opened out to synthetic chemistry by the employment of the temperature of the electric arc. Some of the most interesting results had been obtained from the electric furnace by the French chemist, M. Moissan, in the shape of carbides, stable bodies produced by the combination at high temperatures of carbon with various metals. Many of these carbides were decomposed by water, the hydrogen of the water combining with the carbon to form hydrocarbons. Thus with water some carbides, such as that of calcium, gave acetylene; others, like that of aluminium, gave marsh gas, while others again gave these and other gases, and, what was most wonderful, liquid petroleum. It was a curious fact that many years ago Professor Mendeleef speculated that the only reason for the immense localization



neum at Baku was that it was being generated there—he said by the action of water on carbides. His idea was rather then, but now it was his turn to smile. When acetylene was a dull, red heat, it was polymerized to benzene. Benzene was the basis of all the new modern colours, and thus by three direct steps were able to reach the nucleus of all the colours hitherto derived from coal-tar products. First there was the combination of coke in the electric furnace; second, the decomposition of the gas thus formed by water; and third, the transformation into acetylene by means of heat. Professor Dewar has been occupied by briefly discussing some of the properties of acetylene, among other things, its extraordinarily high luminosity to form an endothermic structure.

### THE SALFORD SEWAGE SCHEME.

Monday, His Honour Judge Parry, sitting at the Salford County Court, had before him the further consideration of the case of *Rey and Irwell Joint Committee v. the Salford Corporation*, as brought to restrain the Corporation from polluting the waters of the Irwell and the Ship Canal. Mr. Sutton appeared for the Joint Committee, and Mr. Roe Ryecroft for the Corporation.

Ryecroft reminded his honour that on the 10th January the Court made an order against the Salford Corporation, but suspended it from taking effect, adjourning the matter until the present day. The Corporation in the meantime to apply to the Local Government Board for sanction to borrow the money necessary to carry out the scheme of sewage purification, which they were contemplating. At the time it was expected that the works referred to would cost £100,000. Since that date a sub-committee was appointed to go into the details of the scheme. As a result of their investigations it was recommended that the Corporation should apply to borrow £50,000, so that subsidiary works might also be carried out in connection with the main scheme. The adoption of this recommendation was proposed at the Salford Town Council at its meeting in March, but an amendment was carried referring it back to the sub-committee. On the 1st of April it was again before the Council, and this time the recommendation was agreed to. On the 17th inst. a formal application was sent to the Local Government Board for sanction to borrow the money, and the Corporation was required to submit plans and all necessary details, and the Corporation waited the decision of the Local Government Board. Notwithstanding the delay in the matter, the cross resolutions of the Council, passed by the engineer and his staff had since January been busily engaged in preparing all the necessary drawings.

Mr. Sutton said that after hearing what had been done and what had not been taken by the Corporation, he would not complain. The Committee had received from the borough engineer the most complete and lavish details, so that anyone could see what was to be done. The Local Government Board would be able to ratify the decision. That board had to make the next move, and he suggested that the Salford Corporation should give notice when they received the decision of the Local Government Board to proceed with the scheme, and that then at a time convenient to all parties they should come to the court.

Judge Parry said the order he made was still in force, but no penalties were enforced at present, subject to the defendants giving immediate notice to the court and the plaintiffs of the result of their application to the Local Government Board. The matter would be adjourned until further notice was known, with leave to apply immediately for a day's adjournment should parties again come into court. Costs throughout would be paid by the Corporation.

### Trade Notes.

**CHANGE OF ADDRESS.**—We are advised by the Grasselli Chemical Company that the New York offices of this company will be removed after the 1st of May to the Sampson Building, 63 and 65, Wall-street, New York.

**MINING MORE OIL TERRITORY.**—The Standard Oil Company has acquired the property of the Rugby Colony, in the mountains of East Tennessee. This is the colony that was founded by the late Judge John Brown, who was best known as the author of "Tom Brown's School Days." The colony was an agricultural enterprise for Englishmen, and failed. The land comprises probably about 27,000 acres. It is a notion that the oil belt found in Pennsylvania and West Virginia extends through the Rugby tract. A small oil well was found there a short time ago. The Standard Oil Company is putting down a well if it does not find oil it will give up the land. It finds oil as rental one-eighth of the oil it gets out of the ground, the rest is payment under an oil lease.

**FURTHER CLAIMS FOR RÖNTGEN RAYS.**—Considerable sensation has been occasioned in American scientific circles by a claim put forward on behalf of Professors Pratt, Wrightman, and Bennett, of the Medical College, Chicago, to the effect that they have discovered that the Röntgen rays are able to kill the bacteria of cholera, diphtheria, pneumonia, influenza, glanders, typhoid, tuberculosis, and anthrax. For some time past scientific men have been working in New York on the lines of the experiments instituted with a similar object in view in Germany and Austria, but little or no result has been obtained. Details of the new claim are, therefore, awaited with much eagerness.

**RIO TINTO CO., LTD.**—The report of this Company for the year ending 31st December, 1895, states that the conversion of the Company's mortgage debt carried through in July last means a net saving to the Company of £64,000. during the year 1895. In the year 1896 and following years the saving will be £74,000, which is equal to more than 2½ per cent. on the share capital of the Company. After providing for all interest and expenses, the profit on sales of produce and other items at the credit of revenue account, including the balance brought down from the previous year, amount to £534,068, and there has been written off the extension and development account by a fixed charge on pyrites £17,860, leaving £516,208. Out of this has been provided the amount of redemption of the first, second, and third five per cent. mortgages £50,500., and the directors have written off and applied to increase of the general depreciation account £25,000., reduction of over burden account £10,000., plant gone out of use, &c., £19,531., leaving a balance of £411,177., which it is proposed to appropriate as follows:—The interim dividend of 10s. per share paid in November absorbed £162,500; to the payment of a final dividend of 12s. per share, £195,000, and to carry to the reserve fund £25,000., leaving a balance to be carried forward of £28,677. The system of exploration which the Company have all along pursued and still continue has enabled their mines manager to give an estimate of the reserves. The ore extracted during the 23 years of the Company's existence has been 23,000,000 tons, and he estimates the quantity now opened to be not less than 135,000,000, which at the present rate of output of 1,400,000 tons per annum represents enough for 97 years' work. Of this quantity it is estimated that 35,000,000 tons consists of ore poor in copper, leaving 100,000,000 tons of a quality not under the average of what has been worked in the past, or, say, 70 years' supply. This does not take into account what may be found in the masses still unexplored.

### Market Reports.

#### TAR AND AMMONIA PRODUCTS.

Benzols are steady at 1s. 11d. for 90's, and 1s. 8d. for 50/90's. Carbolic acids rather easier, 60% crude being quoted 2s. 1½d., and 40% crystals 7¼d. There is no change in solvent naphtha, but crude is easier at 8d. Pitch easy at 32s. 6d. to 33s., f.o.b. East Coast.

Sulphate of ammonia is much the same, and prices very unsatisfactory. Nearest values are:—Beckton and London outside makes £8., Liverpool £7. 17s. 6d., Hull £7. 16s. 3d., and Leith £7. 15s., all prompt. Forward business is quite neglected.

#### LIVERPOOL MINERAL MARKET.

Our market has continued very brisk. Manganese arrivals are nil, whilst considerable quantities are sold for forward delivery, and shipments are materially delayed; stocks are exhausted, and prices therefore are very strong indeed, and likely to be so for some time to come. Ground manganese continues in good demand at £8., £10., £12., and £15. per ton, according to grade. Manganiferous iron ore arrives sparingly; prices are 1s. or 1s. 6d. per ton better. Chrome ore: Arrivals continue steady; the demand is improving, and prices are well maintained. Bauxite continues in special request, and sales are being made at 20s. for first, 16s. for second, and 12s. for third quality, f.o.b. French chalk: Superfine quality is exceedingly scarce; the demand is good, especially for "Angel White" brands, and sales are being made at 65s. to 70s., 80s. to 90s., and 100s. to 110s. per ton, according to grade. Wolfram and scheelite: The market is cleared; prices therefore cannot be fixed at the moment; recent sales have been made at improved figures. Arsenic: Full prices have been paid for both prompt and forward delivery. Fuller's earth is steady at 50s. for lump, 55s. for ground, and 76s. per ton for impalpable powder. Ochres and umbers are in good request at 65s. per ton for J.C. ochre, and 40s. to 45s. per ton for prime umber. Antifriction ore is unchanged, the demand continuing steady. Pumice-stone is in more demand, especially for prime lump; prices are firm at £6. 10s. per ton for ground, and £7. per ton for superior Tenerife lump. Asbestos and



mica meet with steady sale at full prices. Bog ore: Stocks are practically exhausted; prices are improving, and as the shipping season is now commencing, large business is anticipated, the demand being very strong. Magnesite sells slowly. Plumbago: Founders' and lubricating qualities meet with a full demand at good prices: £6. 10s. to £10. per ton, according to grade, with prime Ceylon being done at £15. to £20. per ton. Carbonate and sulphate of barytes are in quiet demand, and prices are steady. Molybdenite, ceritum, euxenite, orthite, etc., are in quiet demand.

### MISCELLANEOUS CHEMICAL MARKET.

In the alkali trade values of all products are steady, and there is a moderately good demand for export, which, with some reduction in output, is preventing any undue accumulation of stocks. For caustic soda, spot delivery, quotations are as follows:—F.o.b. Liverpool, 77%, £9. 7s. 6d.; 74%, £8. 7s. 6d.; 70%, £7. 7s. 6d.; 60%, £6. 7s. 6d. per ton, 10-ton lots and upwards. Bleaching powder, £7. softwoods, makers' works, and £7. 5s. hardwoods, f.o.b., Liverpool, with some variations according to market. Alkali, 58%, steady, at £3. 7s. 6d., bags, makers' works, and £3. 12s. 6d., casks, f.o.b. Leblanc ash, 1d. to 1½d., f.o.b. Soda crystals, 32s. 6d. to 35s., bags, f.o.r. Chlorate of potash 4½d. Chlorate of soda, 6¼d. to 6½d. per lb. Recovered sulphur, £3. 12s. 6d., f.o.r. Sulphate of copper easier, at £17. 10s. prompt, and £16s. 15s. to £17. forward. Brown acetate of lime without improvement, at £4 5s., net, c.i.f. Grey acetate, £7. 10s., c.i.f. Sugar of lead slightly easier. Acetate of soda firm, at £14. 10s. In white powdered arsenic there is a rather better supply—pre firm, at £23. prompt, and £22. 10s. forward. Potash, caustic firm in price, and in good demand. Carbonate, 90/92%, £17., c.i.f. Yellow prussiate of potash, 7¼d per lb. Prussiate of soda, 6¼d. Cyanide, 98%, 1s. 2½d. to 1s. 3d. per lb. Borax quiet, and price unchanged. Nitrate of soda steady, at 7s. 10½d. per cwt. Carbolic acid crystals lower, at 7¼d. to 7½d. per lb. Ammonia muriate in good inquiry, at £22. per ton. In aniline oil and salt there is no change in price, but only little business doing. Sulphocyanides in fairly good request, and prices unaltered. Reports generally indicate a quiet state of trade in chemicals.

### REPORT ON MANURE MATERIAL.

The market is fairly steady, and there has been a considerable amount of business passing for prompt and early delivery, but the most that can be said is that prices have been about maintained. There are sellers of 75/80% Florida phosphate rock at 6d. per unit, in cargoes c.i.f. to United Kingdom ports, and of South Carolina River rock at 5½d. per unit, 1896 steamer shipment, but buyers do not seem at all keen at these prices. For summer shipment there are sellers of cargoes of River Plate bones at £3. 17s. 6d. per ton to good United Kingdom ports, but buyers' ideas do not go beyond about £3. 15s. There are now sellers of Bombay bone meal for shipment at £3. 13s. 9d per ton ex quay, and of arrived parcels at £3. 16s. 3d. For crushed East Indian bones sellers ask £4., but there are no buyers at this figure. A parcel of crushed River Plate bones on spot offers at £3. 12s. 6d. per ton. Nitrate of soda is steady, at 8s. per cwt. for fine quality on spot. Due cargoes, ordinary quality, are worth about 7s. 10½d., and summer-autumn shipment 8s. 3d. to 8s. 4½d. per cwt. Home-prepared dried blood offers at 7s. 6d. per unit, free on rails at works.

### HULL PAINT, OIL, AND COLOUR REPORT.

TUESDAY.

OILS.—Although the volume of business continues relatively good, values from one cause or another continue to recede, which circumstance damps all speculation, buyers being satisfied to buy from "hand to mouth." During the week the imports have been 34,608 quarters of linseed from River Plate, 1,360 tons of cottonseed from Alexandria, and 7,266 quarters of rapeseed from Novorossisk. Linseed oil has declined about 7s. 6d. per ton, closing dull at 17s. 7½d. naked, spot or month; May-August and September-December offer at 18s. 4½d., with buyers at 18s. 3d. Boiled and refined from £1. to £2. per ton extra. The export for the week has been 3,000 cwt. Refined cotton oil dull, with sellers at 15s. naked, spot or month; May-August offered at 15s. 6d. Crude flat at 13s. 6d. naked, spot; month worth 13s. 7½d; May-August sellers, 14s.; casks £1. and ordinary barrels 30s. per ton extra. Export of refined oil for the week, 6,340 cwt. Spirits of turpentine unchanged and firm. Olive oil quoted from £26. per ton for Spanish oil. Castor oil, 2½d. per lb for first pressure. Cod oil, from £17. to £20. per ton. Boiled siccative oil, £13. per ton. Brown Yorkshire grease, £8. per ton. American cottonseed oil soap: 70% fatty acids, £11. 5s. ex warehouse in barrels.

CAKES.—Linseed cakes quiet, but steady: 95% pure, £6. 2s. 6d. per ton; Russians, £5. 17s. 6d.; America Oil cakes, £5. Cotton cakes, firm: Best makes, £4.; second 12s. 6d. to £3 15s. Rape cakes unchanged.

PAINTS.—The season, judging from the early months of the year, promises to be very good. The home market is fully alive, intermingled with some promising enquiries from abroad. Prices are:—White and oxide of zinc unchanged; venetian red, yellow ochre, mineral black, from £3. 0 to £5. per ton, dry; oxide dry, £7. per ton upwards; red lead unchanged; red paints in tins, from £24. per ton paint remover, £1. 5s. to per cwt.

### THE METAL MARKETS.

LONDON, WEDNESDAY.—Pig iron, lower: Scotch closed at 46s. 0½d.; Middlesbrough, 37s. 10d. cash, and 47s. 9½d. Copper, quiet: Chili bars, G. O. B.'s and G. closed at £44. 18s. 9d. to £45. 3s. 9d. cash, and £45. 5s. to £46. three months. Tin, quiet: Straits closed at £59. 7s. 6d. to £59. cash, and £60. to £60. 10s. three months; Australian, £63. English ingots, £63. 10s. Lead, dull: Spanish, £10. 1 English, £11. 2s. 6d.; Silesian spelter, ordinary, £15. 12 English, £15. 15s. Nickel, 1s. 2½d. Antimony, £30. 5s. to £30. 10s. Quicksilver, lower: first hands, £6. 15s.; second hands, £6. Copper shares, quiet: Cape, 2¼ to 2½; Copiapo, 2 to 2¼; 2¼ to 3¼; Mason and Barry, 3¼ to 3½; Rio Tinto, 18½ Tharsis, 5½ to 5¾.

GLASGOW, WEDNESDAY.—Market firmer, with good Scotch done at 46s. and 46s. 0½d. cash, also at 46s. 2d., 46s. 46s. 2½d. one month; closing with buyers at 46s. 0½d. cash ask 46s. 1d. Cleveland done at 38s., 38s. 1d., and 38s. one closing with buyers at 37s. 10d. cash, sellers ask 37s. 11d. land hematite done at 47s. 9d. cash, also 47s. 11d. one closing with buyers at 47s. 9½d. cash, sellers ask 47s. Middlesbrough hematite closes with buyers at 45s. 4d. cash ask 45s. 5d.

### LIVERPOOL OIL AND COLOUR MARKET.

WEDNESDAY.

OILS.—Palm oil is dull. Some spot business has been done at £19., but for forward prices range from £18. 17 to £18. 15s. Olive is steady at £29. to £30. for Malaga, and £29. for Seville, there being small sales at these prices. Lard, firm, holders remaining steady at 19s. 9d. to 21s. per cwt. for 1 makes, in export casks. There is no change in cottonseed, refined being quoted 17s. to 17s. 6d. per cwt. Castor oil is though rather quiet: Good seconds Calcutta are quoted 2¾d. and first pressure French 2½d. to 2¾d. per lb. Tallow is doing an easier tendency, though so far prices are very slightly Resin is moving fairly well, at full figures: Common is quoted to 5s. per cwt., and fine and medium grades at corresponding Spirits of turpentine are much firmer, and have experienced advance to 22s. 6d. per cwt., with the prospect of a further Petroleum steady: American 6¼d. to 7½d., and Russian refined per gallon.

COLOURS are steady, without alteration in Ochres: Oxfordshire, common, £10., medium, £12., best Derbyshire, common, 40s.; medium, 50s., best, 60s.; Welsh 90s., seconds, 50s., and common, 18s.; Irish, Devonshire, 45s.; French, J.C., 60s. to 65s.; M.C., 65s. to 67s. 6d. Turkish quiet; Devonshire, 50s. to 55s. White lead, £16. unchanged. Venetian red, £6. to £10. Cobalt: Prepare 9s. 9d.; black, 9s.; blue, 6s. Zaffres: No. 1, 3s. 6d.; 2s. 6d. Oxide of iron: Common, £7.; medium, £10.; fine Zinc oxide, £22. 10s. to £25.

### TYNE CHEMICAL REPORT.

TUESDAY.

Chemicals are still quiet, and new business limited. Sulphur, however, are improving, and there is rather more inquiry crystals are still on a basis of £2. 2s. 6d. per ton, gross weight Sulphur steady, at £3. 17s. 6d. per ton. Caustic, 76/77%, £9. 10s.; 70%, £7. 10s. per ton.

Bleaching powder, softs, £7. 5s. per ton, nett; hards, £7. 10s. nett; caustic soda, 76/77%, £9. 5s. per ton, nett; do., 70%, per ton, nett; recovered sulphur, 2 cwt. bags, £3. 17s. 6d. per ton, nett; soda ash, 48%, £4. per ton, nett; do., 50%, £4. 3s. per ton, nett; do., 52%, £4. 6s. 8d. per ton, nett; alkali, 36%, per ton, nett; white alkali, 48%, £4. 10s. per ton, nett; do.



per ton, nett; do., 52%, £5. per ton, nett; hyposulphite of  
cwt. casks, £6. 5s. per ton, nett; do., 1 cwt. kegs, £7.  
nett; silicate of soda, 75° Tw., £2. 12s. 6d. per ton, nett;  
° Tw., £3. per ton, nett; do., 140° Tw., £3. 7s. 6d.  
nett; soda crystals, casks, £2. 2s. 6d. per ton,  
light; do., 2 cwt. bags, £2. 2s. 6d. per ton, nett weight;  
of potash, 5d. per lb., less 6%; pearl hardening,  
ton, nett; pure white sulphate of alumina, £3. 17s. 6d.  
nett; blanc fixe, £7. 5s. per ton, nett; chloride of barium,  
rystals, £6. 15s., per ton, nett; do., 90/95%, crude calcined,  
ton, nett; sulphide of barium, crystals, £4. 15s. per ton, nett;  
of alumina, £30. per ton, nett; aluminate of soda, £30.  
nett.

—South Durham salt is in rather fuller demand, at 9s. per  
Tees.

S.—There is a slight improvement in the market, and ship-  
the Baltic Ports are now commencing. Coke is very steady,  
demand at present for home consumption is quite abnormal.  
quotations are:—Best Northumbrian steam, 8s. to 8s. 3d. per  
ond qualities, 7s. to 7s. 3d. per ton; small steam, 3s. 6d. to  
er ton; manufacturing coals, quiet, 4s. 6d. to 5s. per ton; gas  
6d. to 6s. 9d. per ton; coke, firm, 15s. to 15s. 6d. per ton.

## WEST OF SCOTLAND CHEMICALS.

GLASGOW, TUESDAY.

Partial improvement in the general market lately reported, may  
have still kept, if not extended, but on the whole the better-  
y very moderate of compass. The tendency, perhaps, is still  
rather greater firmness of price, but without any positive ad-  
any case. The market continues fairly supplied with en-  
and orders about Baltic shipment, chiefly bleaching powder,  
d caustic soda. Soda crystals form the exception to the general  
ng less asked for, and tendency to a weakening of price.  
of ammonia still holds to the weary sinking process, having  
been done down to £7. 15s., spot terms, Leith. Makers are  
uzzled and disappointed with the article. Mineral oils and  
are, in the meantime, unchanged, but changes may be in pro-

Meetings of the makers are being held, one of the questions  
being whether it is worth while to continue the combination  
cers.

prices current are:—Soda crystals, £2. 2s. 6d., nett, Tyne;  
48/56°, £3. 15s. to £4. 15s. nett, Tyne; white alkali,  
4. 10s. to £5. nett, Tyne; alum in lump, £5. to £5. 5s. nett,  
caustic soda, white, 74° £8. 7s. 6d., 70/72° £7. 7s. 6d., 60/62°  
6d., and cream, £6. 7s. 6d., all nett, Liverpool; bleaching  
£7. nett, Tyne; saltcake, 23s.; borax, English,  
£20., and boric acid, £30. nett, Glasgow; bicarbonate of  
wt. casks, £6. 10s., and 1-cwt. casks £6. 15s. nett, Liverpool;  
te of potash, 4½d. nett, for Scotch and English deliveries (for  
½d. nett, f.o.b. Glasgow); bichromate of soda, 3½d. nett, for  
ad English deliveries (for export, 3½d. nett, f.o.b. Glasgow);

chlorate of potash, 5d. less 5%, Liverpool; nitrate of soda, 8s. to  
8s. 3d.; sulphate of ammonia, £7. 15s. prompt, f.o.b. Leith;  
salammoniac, first and second white, £39. and £37. nett, any port;  
sulphate of copper, £17. 15s. less 5%, Liverpool; paraffin  
scale, hard, 1½d. and soft, 1½d. to 1½d. per lb.; paraffin wax, 120°  
semi-refined, 2½d. to 2½d.; paraffin spirit (naphtha), 7d. per  
gallon; paraffin oil (burning) No. 1, 6½d., and crystal, 6½d., at works,  
for Scotch buyers (English sales about ½d. lower); ditto (lubricating)  
865° £5., 885° £5. 10s. to £6., and 890/895° £6. to £6. 10s.  
Week's imports of sugar at Greenock were nil.

## New Companies.

**Jones Bros. and Co. (Wolverhampton), Limited.**—CAPITAL  
£25,000., in £10. shares. This company has been formed to carry on  
the business of Messrs. Jones Bros. and Co. and the Enamel Sign Co.,  
at Wolverhampton, and to trade as tinplate workers and enamellers,  
etc. The subscribers to the memorandum of association are:—Mrs. S.  
Jones, Highfields, Wolverhampton; Miss E. R. Jones, Highfields,  
Wolverhampton; Miss S. A. Jones, Highfields, Wolverhampton; W.  
Hall Jones, Highfields, Wolverhampton, manufacturer; T. L. Jones,  
Highfields, Wolverhampton, builder; Mrs. L. H. Jones, Pennfields,  
Wolverhampton; B. H. Jones, Pennfields, Wolverhampton, manufac-  
turer.

**Leverett-Bake Tanning Co., Limited.**—CAPITAL £50,000., in  
£1. shares. This company has been formed to acquire a certain  
licence for the manufacture of certain goods at one tannery, under  
patent 13,195/94. The subscribers to the memorandum of association  
are:—R. Bedford, Marston, South Ealing, gentleman; E. S. Roche,  
204, Lancaster-road, W., gentleman; H. P. Spiller, 28, Hastings-  
road, Ealing, gentleman; F. Down, 18, Cornwall-road, Stroud Green,  
N., gentleman; J. Fettes, 32, St. Mary's-square, Kennington,  
gentleman; E. W. Streat, 95, Woodlands-road, Ilford, gentleman;  
C. E. Hooke, 196, Holland Park-avenue, W., gentleman.

**Wortley, Cane, and Co., Limited.**—CAPITAL £5,000., in £5.  
shares. This company has been formed to acquire and carry on the  
business of chemical manufacturers, now carried on by the Wandsworth  
Chemical Works, Limited, and Messrs. Wortley, Cane, and Co.,  
Clifford-street Works, Manchester. The registered office is Causeway,  
Wandsworth Common, S.W.

**Gallow Hill Glue and Chemical Co., Limited.**—CAPITAL  
£25,000., in shares of £1. each. This company has been formed to  
acquire and carry on the business of glue and chemical manufacturers,  
at Great Bowden, Leicester. The registered office is 36, Mark-lane,  
E.C. The subscribers to the memorandum of association are:—S.  
Symington, Brooklands, Market Harborough, merchant; Mrs. S.  
Symington, Brooklands, Market Harborough; J. Smith, Sunny Bank,  
Market Harborough, auctioneer; E. O. G. Head, Sunny Bank,  
Market Harborough, manufacturer; R. England, 36, Mark-lane, E.C.,  
chemical manufacturer; J. E. Wilson, Airton, Wood Green, N., C.A.;  
R. D. England, 36, Mark-lane, E.C., chemical manufacturer.

## IMPORTS OF CHEMICAL PRODUCTS

AT

### THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

#### LONDON.

ending April 11th.

acid—  
20 pks. H. Wallace & Co.  
214 A. & M.  
Zimmermann  
274 Little & Johnston

2 dms. Thames S. T. & L.  
Co.

10 Lister & Biggs

228 c. J. Harrison

2½ J. Barber & Co.

203 cks. Ohlenschlager  
Brs.

6 J. Barber & Co.

um Chloride—  
2 cks. H. Lorenz

Oil—  
3 dms. G. Rahn & Co.

ly—  
5 t. H. R. Merton & Co.

Arsenic—  
Germany, 30 cks. G. Boor & Co.

Asbestos—  
Italy, £13 J. W. Harker  
660 W. Byford

Barium Chlorate—  
Germany, 23 cks. Petri Brs.

Barytes—  
Germany, 34 cks. H. B. Alder  
& Co.

Belgium, 68 W. Harrison & Co.

Holland, 23 O'Hara & Hoar

" 23 E. J. Diggins

Germany, 115 Taylor Brs.

Belgium, 170 J. L. Lyon & Co.

Holland, 88 Taylor Brs.

Camphor—  
Germany, 105 cs. T. Merry & Son

" 288 R. Warner & Co.

" 102 City Coml. Wf. Co.

Caoutchouc—  
Singapore, 124 c. W. Pope & Co.

" 167 E. Boustead & Co.

Aden, 140 L. & I. D. Jt. Co.

France, 40 H. Johnson & Sons

Singapore, 10 Elkan & Co.

" 480 Ross & Deering

U. States, 25 W. Pope & Co.

B. W. I., 70 Prop. Bull Wf.

Rep. Colombia, 10 c. "

Carbonic Acid—  
Germany, 35 pks. Krayner, Back  
& Co.

Castor Oil—  
Belgium, 20 brls. Jessop & Co.

Italy, 50 cs. Lucas & Spencer's  
Wf. Ld.

E. Indies, 75 Anderson, Weber  
& Co.

France, 20 "

Caustic Potash—  
France, 40 drs. J. Knight & Sons

Belgium, 10 Petri Brs.

Chemicals (otherwise undes.)—  
France, £18 Flageollet & Co.

Holland, 10 H. Lambert

Germany, 380 T. H. Lee

" 54 L. & I. D. Jt. Co.

" 47 Philipps & Graves

" 410 A. & M.  
Zimmermann  
Belgium, 319 T. Palmer

Chrome Ore—  
Sydney, 55 t. L. & I. D. Jt. Co.

Cobalt Ore—  
Australia, 200 t. Fellows, Morton & Co.

Cream of Tartar—  
France, 5 cks. F. C. Devon & Co.

" 5 W. C. Bacon & Co.

Rangoon, 4 L. & I. D. Jt. Co.

France, 5 Ross & Deering

Italy, 13 Fellows,  
Morton & Co.

Spain, 92 pks. Thames S. T.  
& L. Co., Ld.

France, 43 B. & F. Wf. Co.

Dextrine—  
Germany, 19 cks. City Coml. Wf. Co.

France, 5 bgs. J. W. Drysdale  
& Co.

Germany, 50 M. D. Co.

" 20 R. G. Hall & Co.

" 50 H. Lorenz

Dyestuffs—  
Aniline  
Holland, 1 pk. L. C. & D. Rly.

Annatto  
U. States, 10 cs. Major & Field



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| <b>Argols</b><br>Italy, 748 bgs.<br>" 200 | B. Jacob & Sons<br>Thames S. T. & L. Co. | <b>Glue—</b><br>£2,351<br>Holland, 1 ck.<br><b>Lithopone—</b><br>Holland, 40 cks.<br><b>Manganese Ore—</b><br>Japan, 25 t.<br><b>Manure—</b><br>A. Turkey, 7 t.<br>Sydney, 64<br>Germany, 45<br><b>Methyl Alcohol—</b><br>Belgium, 10 dms.<br>Germany, 10<br>" 14<br>" 12<br><b>Mica—</b><br>E. Indies, £1,835<br><b>Molasses—</b><br>U. States, 100 cks 580 c. | Spies Brs. & Co.<br>Spies Brs. & Co.<br>J. Barber & Co.<br>Elkan & Co.<br>M. D. Co.<br>Aust. Meat Co.<br>Humphery & Co.<br>H. Lorenz<br>Lister & Biggs<br>F. Jones & Co.<br>Stein Brs.<br>W. M. Smith & Sons<br>Bellamy & Co. | <b>Naphtha—</b><br>Belgium, 4 dms.<br><b>Ochre—</b><br>France, 103 cks.<br>" 22<br>" 27 brls.<br>Holland, 2 cks.<br>France, 103<br><b>Phosphate Rock—</b><br>France, 315 t.<br><b>Pitch—</b><br>Germany, 29 brls<br>France, 10<br>U. States, 31<br><b>Plumbago—</b><br>E. Indies, 5 cs.<br>Germany, 4 cks.<br>Ceylon, 19<br>Germany, 98<br>" 16<br><b>Potash—</b><br>Holland, 2 cs.<br>France, 5 cks.<br><b>Potassium Bicarbonate—</b><br>Holland, 40 c. A. & M. Zimmermann<br>France, 9 cks. B. & F. Wf. Co.<br>Germany, 8<br><b>Potassium Carbonate—</b><br>Germany, 10 c.<br>France, 39<br><b>Potassium Cyanide—</b><br>Holland, 13 cs.<br>" 45<br><b>Potassium Oxymuriate—</b><br>Sweden, 20 kgs.<br><b>Potassium Sulphate—</b><br>Belgium, 300 bgs.<br><b>Pumice Stone—</b><br>Italy, 7 t.<br>" 10 c.<br>Holland, 14<br><b>Rosin—</b><br>U. States, 4,368 brls.<br>France, 14<br><b>Rosin Oil—</b><br>U. States, 25 brls.<br><b>Saltpetre—</b><br>E. Indies, 322 bgs.<br>" 1,793<br><b>Sheep Dip—</b><br>Lyttelton, 313 pks.<br><b>Soda—</b><br>Belgium, 5,000 c.<br><b>Sodium Bicarbonate—</b><br>Holland, 20 c. A. & M. Zimmermann<br><b>Sodium Nitrate—</b><br>Chili, 1,650 t.<br><b>Starch—</b><br>Germany, 134 cs.<br>Holland, 30<br>Belgium, 80<br>" 200<br>" 200<br>U. States, 200<br>Holland, 1,270<br>Belgium, 727<br>Germany, 540<br>Belgium, 40<br>Germany, 280 | <b>Stearine—</b><br>N. Zealand, 44 cks.<br>Belgium, 13 bgs.<br>France, 63<br>" 137<br>U. States, 30<br>Holland, 2 bls.<br>France, 130 bgs.<br><b>Sulphur</b><br>Italy, 5 t.<br>" 75<br>" 27<br>" 10<br>" 200<br>" 3<br>" 10<br>" 25<br><b>Tartaric Acid—</b><br>Holland, 18 pks.<br>" 18<br>U. States, 38<br>France, 10<br><b>Tin Oxide—</b><br>Germany, 1 ck.<br><b>Ultramarine—</b><br>Holland, 10 cs.<br>Germany, 1<br>Holland, 20 cks.<br><b>Varnish—</b><br>U. States, 11 pks.<br><b>Verdigris—</b><br>France, 2 cks.<br>" 1<br><b>Vermillion—</b><br>Hong Kong, 20 cs.<br><b>White Lead—</b><br>Germany, 18 cks.<br>" 37<br>" 80<br>Holland, 20<br>" 40<br>Belgium, 16<br>" 4<br>Germany, 60<br>Holland, 15<br>" 58<br>" 15<br>" 20<br>" 78 brls.<br>Germany, 52 cks.<br><b>Wood Pulp—</b><br>Sweden, 306 pks.<br>Holland, 540<br>Sweden, 97<br>" 38<br>Germany, 7<br>Belgium, 400<br>Norway, 72<br>Germany, 200<br>Sweden, 4<br>Norway, 6,266<br>Holland, 108<br>" 52<br>" 80<br><b>Zinc Oxide—</b><br>Holland, 50 brls.<br>U. States, 100<br>Holland, 500 cks.<br>Germany, 25<br>" 50<br>" 150<br><b>Zinc White—</b><br>Holland, 23 cks. | Dalgety & Co.<br>H. Hill & Sons<br>S. J. Clark<br>Beresford & Co.<br>G. Rahn & Co.<br>Walbaum & Tosetti<br>F. Smith<br>G. Boor & Co.<br>J. Greig<br>Soundy & Sons<br>A. Hunter & Co.<br>J. Kitchin, Ltd.<br>F. C. Devon & Co.<br>Co-op. Lightgr. Association<br>B. & F. Wf. Co.<br>Kirkpatrick & Co.<br>R. H. Chaffin<br>B. & F. Wf. Co.<br>H. Lambert<br>Phillipps & Graves<br>H. Brooks & Co.<br>Thames S. T. & L. Co., Ltd.<br>Allan Brs. & Co.<br>B. & F. Wf. Co.<br>H. Lorenz<br>W. M. Smith & Sons<br>Randall Bros.<br>D. Storer & Sons<br>Steinhoff, Sons, & Co.<br>E. J. Diggins<br>A. & M. Zimmermann<br>J. L. Lyon & Co.<br>Haefner, Hilpert, & Co.<br>Taylor Brs.<br>Randall Bros.<br>T. & W. Farniloe<br>J. Owen<br>Burrell & Co.<br>W. Balchin<br>Spies Brs. & Co.<br>W. G. Taylor & Co.<br>Phillipps & Graves<br>Henderson, Craig, & Co.<br>Thames S. T. & L. Co.<br>W. E. Bott & Co.<br>W. Friedlander<br>T. Ronaldson & Co.<br>Tough & Henderson<br>Beadle Brs., Ld.<br>Christophersen, Andrews, & Co.<br>Moreton Cox Brs.<br>Beadle Brs.<br>W. G. Taylor & Co.<br>Henderson, Craig, & Co.<br>M. Ashby, Ltd.<br>Soundy & Sons<br>J. Matton<br>M. Ashby, Ltd.<br>W. Balchin<br>G. Rahn & Co. | Marseilles, 15 brls.<br>Leghorn, 7 cs.<br>Calcutta, 492<br>" 545<br><b>Colours—</b><br>Hamburg, 4 cks.<br>Antwerp, 12<br>Fletcher &<br><b>Cottonseed Oil—</b><br>N. Orleans, 3,300 brls.<br>New York, 500<br><b>Cream of Tartar—</b><br>Tarragona, 5 cks.<br>" 7 pps.<br>Barcelona, 5<br><b>Dyestuffs—</b><br><b>Cochineal</b><br>Las Palmas, 2 bgs.<br>" 16<br>J. & J. Pa<br>Lazard<br><b>Cutch</b><br>Rangoon, 4,478 bxs.<br><b>Divi Divi</b><br>Hamburg, 35 bgs.<br><b>Extracts</b><br>New York, 50 bxs.<br>Antwerp, 85 cks.<br><b>Fustic</b><br>Carthage, 70 t.<br>Corfu, 125 bds.<br>Carthage, 22 ps.<br>Tampico, 3,038<br>" 3,434<br>" 1,115<br>Bombay, 2,546 bgs.<br>" 265<br>" 2,940<br><b>Orchella</b><br>Valparaiso, 6 bls.<br><b>Saffron</b><br>Valencia, 1 cs.<br><b>Shumac</b><br>Palermo, 100 bgs.<br>" 100<br>Barcelona, 100<br><b>Valonia</b><br>Patras, 157 bgs.<br><b>Dyestuffs (otherwise undescr)</b><br>Hamburg, 40 bgs.<br><b>Glucose—</b><br>New York, 600 brls.<br>Boston, 450<br><b>Glue—</b><br>Hamburg, 80 bgs.<br>Philadelphia, 30 brls.<br><b>Iodine—</b><br>Valparaiso, 22 brls.<br><b>Limestone—</b><br>Antwerp, 3 cs.<br><b>Manure—</b><br>Fiume, 100 bgs.<br><b>Mica—</b><br>Calcutta, 10 cs.<br><b>Mineral White—</b><br>Fiume, 100 bgs.<br><b>Minium—</b><br>Rotterdam, 37 cks.<br><b>Ochre—</b><br>Marseilles, 58 brls.<br>Alicante, 65<br><b>Oxalic Acid—</b><br>Rotterdam, 7 cks.<br><b>Paint—</b><br>New York, 10 cs.<br>Hamburg, 20<br>Philadelphia, 50 brls.<br><b>Paraffin Scale—</b><br>Rangoon, 800 bxs.<br><b>Potash—</b><br>Hamburg, 19 cks.<br>Bayin, 2 brls.<br><b>Potassium Nitrate—</b><br>Malaga, 26 bgs. |
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## LIVERPOOL.

Week ending April 9th.

|                      |            |                   |
|----------------------|------------|-------------------|
| <b>Antimony Ore—</b> |            |                   |
| Marseilles,          | 2,040 bgs. |                   |
| <b>Barytes—</b>      |            |                   |
| Rotterdam,           | 55 cks.    |                   |
| Antwerp,             | 14         |                   |
| <b>Borax—</b>        |            |                   |
| Valparaiso,          | 1,480 sks. |                   |
| Tome,                | 3,500      | G. & C. Muray     |
| <b>Caoutchouc—</b>   |            |                   |
| Valparaiso,          | 31 bls.    | J. H. Schroder    |
| "                    | 4          | W. Brandts & Sons |



|                         |                      |
|-------------------------|----------------------|
| 2,455 t.                | Matheson & Co.       |
| 854                     |                      |
| rk, 1,400 brls.         |                      |
| 19                      |                      |
| 150                     |                      |
| re—                     |                      |
| 2 cks. 20 kgs.          |                      |
| 1,290 bgs.              | Ralli Brs.           |
| 478                     |                      |
| 76 cks.                 | J. T. Fletcher & Co. |
| re, 1 pcl.              |                      |
| 100 brls.               |                      |
| 25 cs.                  |                      |
| am, 3                   |                      |
| phia, 8                 |                      |
| 25                      | Hawkes,              |
| es, 7                   | Somerville, & Co.    |
|                         | R. J. Francis & Co.  |
| re—                     |                      |
| 300 bgs.                |                      |
| 1,000                   |                      |
| rk, 100 bgs.            | T. M. Duche & Sons   |
| 650 sks.                |                      |
| 2 brls.                 | J. Braithwaite & Son |
| 600                     |                      |
| 110 brls.               |                      |
| rg, 92 cs.              |                      |
| am, 100                 |                      |
| ph, 451                 |                      |
| 150 t. 69 bgs. 60 brls. |                      |
| rk, 300 bds.            |                      |
| 794 pps. 1,558 hf.-pps. |                      |
| ix, 11 cks.             |                      |
| c Acid—                 |                      |
| am, 6 cks.              |                      |
| arine—                  |                      |
| am, 1 ck.               |                      |
| Salt—                   |                      |
| rg, 545 bgs.            |                      |
| lead—                   |                      |
| am, 61 cks.             |                      |
| ph, 27                  | 18 brls.             |
| Pulp—                   |                      |
| am, 500 bls.            |                      |
| ph, 165                 |                      |
| ide—                    |                      |
| am, 25 cks.             | J. Mathews & Co      |
| ph, 80 brls.            |                      |
| nite—                   |                      |
| am, 100 cks.            |                      |

# **MANCHESTER.**

Week ending April 11th.

|                             |               |
|-----------------------------|---------------|
| n—                          | 12 cks.       |
| rg, 9                       | 5 cs.         |
| ium—                        |               |
| ph, 1 cs.                   |               |
| ium Chloride—               |               |
| ph, 5 cks.                  |               |
| ny—                         |               |
| ph, 2 cks.                  |               |
| ny Salt—                    |               |
| lam, 5 cks.                 |               |
| Chlorate—                   |               |
| lam, 10 cks.                |               |
| ph, 100 bgs.                |               |
| als (otherwise undescribed) |               |
| lam, 15 cks.                |               |
| ph, 40 cks.                 |               |
| rg, 9                       | 2 brls.       |
| ph, 8                       |               |
| lam, 17                     | 33 cs. 122    |
| 21 bxs.                     |               |
| ffs—                        |               |
| rine                        |               |
| lam, 32 cks. 1 cs.          |               |
| mac                         |               |
| ph, 535 bgs.                | 112 bls.      |
| 1,210 bgs.                  | Brown,        |
| 2,566                       | Geveke, & Co. |

|                |            |                      |
|----------------|------------|----------------------|
| Hamburg,       | 100        |                      |
| Glucose—       |            |                      |
| New York,      | 60 brls.   |                      |
| Glue—          |            |                      |
| New York,      | 10 brls.   | D. Moseley & Son     |
| Rotterdam,     | 53 bgs.    | 10 cs.               |
| Rouen,         | 45 cks.    | 21 bls.              |
| Treport,       | 10         | 47                   |
| Hamburg,       | 1 bg.      |                      |
| Limestone—     |            |                      |
| Antwerp,       | 7 cs.      | J. T. Fletcher & Co. |
| Litharge—      |            |                      |
| Rotterdam,     | 13 cks.    |                      |
| Mineral White— |            |                      |
| Bordeaux,      | 80 bgs.    |                      |
| Ochre—         |            |                      |
| Treport,       | 43 brls.   |                      |
| Phosphate—     |            |                      |
| Ghent,         | 1,000 bgs. | J. T. Fletcher & Co. |

|                     |          |                    |
|---------------------|----------|--------------------|
| Plumbago—           |          |                    |
| Genoa,              | 200 bgs. |                    |
| Potash—             |          |                    |
| Rotterdam,          | 15 cks.  |                    |
| Treport,            | 42       |                    |
| Pyrites—            |          |                    |
| Huelva,             | 1,200 t. |                    |
| Potassium Sulphate— |          |                    |
| Rotterdam,          | 2 brls.  |                    |
| Pumice Stone—       |          |                    |
| Messina,            | 10 cs.   |                    |
| Sodium Nitrate—     |          |                    |
| Rotterdam,          | 7 cks.   |                    |
| Starch—             |          |                    |
| New York,           | 200 aks. |                    |
| Rotterdam,          | 200 cs.  |                    |
| Hamburg,            | 292      |                    |
| Ghent,              | 160      |                    |
| Antwerp,            | 222      |                    |
| Talc—               |          |                    |
| Genoa,              | 20 bgs.  |                    |
| Tartaric Acid—      |          |                    |
| Rotterdam,          | 42 cks.  |                    |
| Treport,            | 16       |                    |
| Ultramarine—        |          |                    |
| Rotterdam,          | 4 crts.  |                    |
| Hamburg,            | 8 cks.   |                    |
| Waste Salt—         |          |                    |
| Hamburg,            | qty.     |                    |
| White Lead—         |          |                    |
| Rotterdam,          | 8 cks.   |                    |
| Wood Pulp—          |          |                    |
| Hamburg,            | 77 bls.  | 82 pks.            |
| Rotterdam,          | 400      | 140                |
| Christiania,        | 8,093    | W. Gallagher & Son |
| Drontheim,          |          |                    |
| "                   | 2,400    | A. Wertheim & Co.  |
| Zinc Oxide—         |          |                    |
| Antwerp,            | 31 brls. |                    |
| Rotterdam,          | 20       |                    |

# **HULL.**

Week ending April 11th.

|                                   |                  |                     |
|-----------------------------------|------------------|---------------------|
| Acids—                            |                  |                     |
| Leghorn,                          | 24 cks.          | Wilson,             |
|                                   |                  | Sons, & Co., Ltd.   |
| Alumina Sulphate—                 |                  |                     |
| Rotterdam,                        | 39 cks.          | W. & C. L. Ringrose |
| Asbestos—                         |                  |                     |
| Genoa,                            | 20 bgs.          |                     |
| Barytes—                          |                  |                     |
| Rotterdam,                        | 51 cks. 100 bgs. | W. & C. L. Ringrose |
| "                                 | 185              | Hutchinson & Son    |
| Hamburg,                          | 100 bgs.         | Bailey & Leatham    |
| Antwerp,                          | 18               | 20                  |
| "                                 | 105              | H. F. Pudsey        |
| Bone Meal—                        |                  |                     |
| Boston,                           | 500 sks.         | Wilson,             |
|                                   |                  | Sons, & Co., Ltd.   |
| Camphor—                          |                  |                     |
| Hamburg,                          | 1 ck.            | Wilson,             |
|                                   |                  | Sons, & Co., Ltd.   |
| Castor Oil—                       |                  |                     |
| Leghorn,                          | 45 cs.           | Wilson,             |
| Genoa,                            | 88               | Sons, & Co., Ltd.   |
| Chemicals (otherwise undescribed) |                  |                     |
| Antwerp,                          | 24 pks.          | Wilson,             |
|                                   |                  | Sons, & Co., Ltd.   |

|          |       |                           |
|----------|-------|---------------------------|
| Bremen,  | 1 cs. | Veltmann & Co.            |
| Hamburg, | 2     | 23 cks. 2 pks.            |
|          |       | Wilson, Sons, & Co., Ltd. |

|              |          |                   |
|--------------|----------|-------------------|
| God Oil—     |          |                   |
| Drontheim,   | 24 brls. | Wilson,           |
| Bergen,      | 1        | Sons, & Co., Ltd. |
| Christiania, | 25       | "                 |

|             |                                    |                         |
|-------------|------------------------------------|-------------------------|
| Colours—    |                                    |                         |
| Rotterdam,  | 18 cks.                            | Hutchinson & Son        |
| Antwerp,    | 7 cs.                              |                         |
| Copenhagen, | 1 brl.                             | Wilson,                 |
| Ghent,      | 4                                  | Sons, & Co., Ltd.       |
| Rotterdam,  | 66 cks. 49 cs. W. & C. L. Ringrose |                         |
| Antwerp,    | 3 bxs.                             | 2 brls. 16 pks. Wilson, |
| Bremen,     | 4 cks.                             | Sons, & Co., Ltd.       |
|             |                                    | Veltmann & Co.          |

|                 |           |                   |
|-----------------|-----------|-------------------|
| Cottonseed Oil— |           |                   |
| New York,       | 305 brls. | Wilson,           |
|                 |           | Sons, & Co., Ltd. |

|           |          |                   |
|-----------|----------|-------------------|
| Dextrine— |          |                   |
| Stettin,  | 110 bgs. | Wilson,           |
|           |          | Sons, & Co., Ltd. |

|            |         |                     |
|------------|---------|---------------------|
| Dyestuffs— |         |                     |
| Alizarine  |         |                     |
| Amsterdam, | 18 cks. | W. & C. L. Ringrose |
| Rotterdam, | 77      | "                   |
| Argols     |         |                     |
| Bordeaux,  | 42 cks. | Wilson,             |
|            |         | Sons, & Co., Ltd.   |

|            |       |                   |
|------------|-------|-------------------|
| Indigo     |       |                   |
| Amsterdam, | 1 cs. | Wilson,           |
|            |       | Sons, & Co., Ltd. |

|         |        |  |
|---------|--------|--|
| Valonia |        |  |
| Smyrna, | 514 t. |  |

|            |          |                   |
|------------|----------|-------------------|
| Farina—    |          |                   |
| Harlingen, | 50 bls.  | Hutchinson & Son  |
| Stettin,   | 230 bgs. | Wilson,           |
|            |          | Sons, & Co., Ltd. |

|          |          |                   |
|----------|----------|-------------------|
| Ghent,   | 351 pks. | "                 |
| Hamburg, | 136 bgs. | "                 |
| Gelatin— |          |                   |
| Dunkirk, | 3 cs.    | Wilson,           |
|          |          | Sons, & Co., Ltd. |

|            |                 |                   |
|------------|-----------------|-------------------|
| Glucose—   |                 |                   |
| New York,  | 1,070 brls.     |                   |
| Rotterdam, | 60 bgs.         | Hutchinson & Son  |
| Glue—      |                 |                   |
| Dunkirk,   | 41 cks. 20 bls. | Wilson,           |
|            |                 | Sons, & Co., Ltd. |
| Antwerp,   | 11              | Bailey & Leatham  |
| Rouen,     | 4               | Rawson & Robinson |

|            |            |                   |
|------------|------------|-------------------|
| Guano—     |            |                   |
| Hamburg,   | 533 bgs.   | Wilson,           |
|            |            | Sons, & Co., Ltd. |
| Kaolin—    |            |                   |
| Rotterdam, | 118 bgs.   | Hutchinson & Son  |
| Lime—      |            |                   |
| New York,  | 1,837 bgs. | Wilson,           |
|            |            | Sons, & Co., Ltd. |

|             |         |                   |
|-------------|---------|-------------------|
| Litharge—   |         |                   |
| Rotterdam,  | 7 cks.  | Hutchinson & Son  |
| Ochre—      |         |                   |
| Marseilles, | 20 cks. | Wilson,           |
| "           | 66      | Sons, & Co., Ltd. |
| Rouen,      | 50      | Rawson & Robinson |
| Paint—      |         |                   |
| Boston,     | 110 cs. | Wilson,           |
|             |         | Sons, & Co., Ltd. |

|            |          |                   |
|------------|----------|-------------------|
| New York,  | 24       | "                 |
| Phosphate— |          |                   |
| Dunkirk,   | 500 bgs. | Wilson,           |
|            |          | Sons, & Co., Ltd. |
| Ghent,     | 160      | "                 |

|             |         |                   |
|-------------|---------|-------------------|
| Phosphorus— |         |                   |
| New York,   | 5 cs.   | Wilson,           |
|             |         | Sons, & Co., Ltd. |
| Pitch—      |         |                   |
| Amsterdam,  | 26 cks. | Hutchinson & Son  |
| Hamburg,    | 2 brls. |                   |

|           |         |                   |
|-----------|---------|-------------------|
| Plumbago— |         |                   |
| Genoa,    | 25 cks. |                   |
| Potash—   |         |                   |
| Hamburg,  | 20 dms. |                   |
| Dunkirk,  | 20      | 91 pks. Wilson,   |
|           |         | Sons, & Co., Ltd. |

|               |        |  |
|---------------|--------|--|
| Pumice Stone— |        |  |
| Leghorn,      | 33 cs. |  |

|             |       |                   |
|-------------|-------|-------------------|
| Soap—       |       |                   |
| Naples,     | 8 cs. | Wilson,           |
|             |       | Sons, & Co., Ltd. |
| Marseilles, | 11    | "                 |

|            |         |                          |
|------------|---------|--------------------------|
| Starch—    |         |                          |
| Antwerp,   | 120 cs. | Furley & Co.             |
| "          | 40      | Bailey & Leatham         |
| Bremen,    | 1,245   | Veltmann & Co.           |
| Rotterdam, | 80      | 24 bxs. Hutchinson & Son |

|           |          |                   |
|-----------|----------|-------------------|
| Stearine— |          |                   |
| Antwerp,  | 191 bgs. | Wilson,           |
|           |          | Sons, & Co., Ltd. |
| "         | 13       | Bailey & Leatham  |

|             |         |  |
|-------------|---------|--|
| Talc—       |         |  |
| Genoa,      | 25 bgs. |  |
| Marseilles, | 50      |  |

|          |         |                   |
|----------|---------|-------------------|
| Tallow—  |         |                   |
| Dunkirk, | 10 cks. | Wilson,           |
|          |         | Sons, & Co., Ltd. |

|            |        |                   |
|------------|--------|-------------------|
| Tar—       |        |                   |
| Stockholm, | 1 brl. | Wilson,           |
|            |        | Sons, & Co., Ltd. |
| Amsterdam, | 5 cks. | Hutchinson & Son  |

|             |        |                   |
|-------------|--------|-------------------|
| Marseilles, | 25     |                   |
| Tartar—     |        |                   |
| Bordeaux,   | 2 cks. | Rawson & Robinson |
| Naples,     | 20     | Wilson,           |
|             |        | Sons, & Co., Ltd. |

|                |           |                   |
|----------------|-----------|-------------------|
| Tartaric Acid— |           |                   |
| Rotterdam,     | 2 cks.    | Hutchinson & Son  |
| Treacle—       |           |                   |
| Boston,        | 800 brls. | Wilson,           |
|                |           | Sons, & Co., Ltd. |

|           |          |                   |
|-----------|----------|-------------------|
| New York, | 478      | "                 |
| Yarnish—  |          |                   |
| Boston,   | 17 pks.  | Wilson,           |
|           |          | Sons, & Co., Ltd. |
| New York, | 10 brls. | "                 |

|             |          |                     |
|-------------|----------|---------------------|
| Waste Salt— |          |                     |
| Hamburg,    | 673 bgs. |                     |
| White Lead— |          |                     |
| Rotterdam,  | 10 cks.  | W. & C. L. Ringrose |
| Amsterdam,  | 11       |                     |
| Rotterdam,  | 10       | Hutchinson & Son    |
| Antwerp,    | 22       | Bailey & Leatham    |

|             |          |                  |
|-------------|----------|------------------|
| Wood Pulp—  |          |                  |
| Hango,      | 559 bls. | J. Good & Sons   |
| Zinc White— |          |                  |
| Rotterdam,  | 10 cks.  | Hutchinson & Son |

# **GLASGOW.**

Week ending April 16th.

|                  |               |                  |
|------------------|---------------|------------------|
| Acetate of Lime— |               |                  |
| New York,        | 724 bgs.      |                  |
| Alum—            |               |                  |
| Hamburg,         | 25 cks.       |                  |
| Aniline—         |               |                  |
| Rotterdam,       | 4 cs. 13 cks. | J. Rankine & Son |

|                  |         |                  |
|------------------|---------|------------------|
| Aniline Colours— |         |                  |
| Hamburg,         | 1 cs.   |                  |
| Barytes—         |         |                  |
| Rotterdam,       | 46 cks. | J. Rankine & Son |
| "                | 46      |                  |

|                                   |        |                  |
|-----------------------------------|--------|------------------|
| Caoutchouc—                       |        |                  |
| Hamburg,                          | 3 cks. |                  |
| Chemicals (otherwise undescribed) |        |                  |
| Rotterdam,                        | 8 cs.  | J. Rankine & Son |
| Hamburg,                          | 1      |                  |

|            |               |                  |
|------------|---------------|------------------|
| Colours—   |               |                  |
| Antwerp,   | 18 cks. 5 cs. |                  |
| Hamburg,   | 1             |                  |
| Rotterdam, | 1             | 3 pks.           |
| "          | 6             | J. Rankine & Son |

|                 |               |                  |
|-----------------|---------------|------------------|
| Creosote Salts— |               |                  |
| Rotterdam,      | 1 ck.         | J. Rankine & Son |
| Dyestuffs—      |               |                  |
| Alizarine       |               |                  |
| Rotterdam,      | 10 pks.       |                  |
| "               | 90 cks. 1 cs. | J. Rankine & Son |
| Argols          |               |                  |
| Bordeaux,       | 111 bgs.      |                  |

|                                   |          |  |
|-----------------------------------|----------|--|
| Dyestuffs (otherwise undescribed) |          |  |
| Philadelphia,                     | 25 brls. |  |
| Baltimore,                        | 10 bxs.  |  |
| Farina—                           |          |  |
| Hamburg,                          | 100 bgs. |  |



|                                      |                                    |  |  |
|--------------------------------------|------------------------------------|--|--|
| <b>Glucose—</b>                      |                                    |  |  |
| Philadelphia, 10 brls.               |                                    |  |  |
| Baltimore, 100                       |                                    |  |  |
| New York, 350                        |                                    |  |  |
| <b>Glue—</b>                         |                                    |  |  |
| Hamburg, 120 bgs.                    |                                    |  |  |
| New York, 2 brls.                    |                                    |  |  |
| <b>Minium—</b>                       |                                    |  |  |
| Rotterdam, 12 cks.                   | J. Rankine & Son                   |  |  |
| <b>Ochre—</b>                        |                                    |  |  |
| Baltimore, 75 brls.                  |                                    |  |  |
| <b>Phosphate Rock—</b>               |                                    |  |  |
| Bona, 1,150 t.                       | A. Cross & Sons                    |  |  |
| <b>Potash—</b>                       |                                    |  |  |
| Rotterdam, 22 cks.                   | J. Rankine & Son                   |  |  |
| <b>Rosin—</b>                        |                                    |  |  |
| Baltimore, 400 brls.                 |                                    |  |  |
| New York, 1,280                      |                                    |  |  |
| <b>Salicylic Acid—</b>               |                                    |  |  |
| Hamburg, 2 cs.                       |                                    |  |  |
| <b>Soap—</b>                         |                                    |  |  |
| Norfolk, 200 brls.                   |                                    |  |  |
| Newport News, 125                    | W. T. Geddes                       |  |  |
| " 170                                |                                    |  |  |
| <b>Starch—</b>                       |                                    |  |  |
| Antwerp, 20 cs.                      | J. Rankine & Son                   |  |  |
| Rotterdam, 140                       |                                    |  |  |
| New York, 500 bxs. 275 sks. 200 bgs. | J. Osborne & Co.                   |  |  |
| " 250                                |                                    |  |  |
| <b>Stearine—</b>                     |                                    |  |  |
| Drontheim, 20 cks.                   |                                    |  |  |
| <b>Sulphur Ore—</b>                  |                                    |  |  |
| Seville, 680 t.                      | Seville Sulphur & Copper Co., Ltd. |  |  |
| <b>Tallow—</b>                       |                                    |  |  |
| New York, 25 tcs.                    |                                    |  |  |
| <b>Tar Oil—</b>                      |                                    |  |  |
| Hamburg, 12 cks.                     |                                    |  |  |
| <b>Tartar—</b>                       |                                    |  |  |
| Bordeaux, 50 cks.                    |                                    |  |  |

|                          |                  |  |  |
|--------------------------|------------------|--|--|
| <b>Varnish—</b>          |                  |  |  |
| New York, 10 brls.       |                  |  |  |
| <b>Waste Salt—</b>       |                  |  |  |
| Hamburg, 150 t. 135 cks. |                  |  |  |
| <b>White Lead—</b>       |                  |  |  |
| Rotterdam, 50 cks.       | J. Rankine & Son |  |  |
| <b>Wood Pulp—</b>        |                  |  |  |
| Christiania, 840 bls.    |                  |  |  |
| <b>Zinc Oxide—</b>       |                  |  |  |
| Rotterdam, 25 cks.       |                  |  |  |
| <b>Zinc White—</b>       |                  |  |  |
| Rotterdam, 150 cks.      | J. Rankine & Son |  |  |

## TYNE.

Week ending April 11th.

|                          |                |  |  |
|--------------------------|----------------|--|--|
| <b>Alum Earth—</b>       |                |  |  |
| Hamburg, 117 cks.        | Tyne S. S. Co. |  |  |
| <b>Barium Carbonate—</b> |                |  |  |
| Rotterdam, 268 bgs.      | Tyne S. S. Co. |  |  |
| <b>Barytes—</b>          |                |  |  |
| Hamburg, 12 cks.         | Tyne S. S. Co. |  |  |
| <b>Colours—</b>          |                |  |  |
| Hamburg, 1 cs.           | Tyne S. S. Co. |  |  |
| Rotterdam, 2 cks.        | "              |  |  |
| <b>Farina—</b>           |                |  |  |
| Hamburg, 20 bgs.         | Tyne S. S. Co. |  |  |
| <b>Glue—</b>             |                |  |  |
| Hamburg, 20 bgs.         | Tyne S. S. Co. |  |  |
| <b>Kieselguhr—</b>       |                |  |  |
| Bergen, 222 bgs.         |                |  |  |
| <b>Limestone—</b>        |                |  |  |
| Antwerp, 8 cs.           | Tyne S. S. Co. |  |  |
| <b>Paint—</b>            |                |  |  |
| Rotterdam, 1 dm.         |                |  |  |
| <b>Potash—</b>           |                |  |  |
| Hamburg, 2 cks.          | Tyne S. S. Co. |  |  |
| Antwerp, 1 dm.           | "              |  |  |
| <b>Rosin—</b>            |                |  |  |
| Savannah, 2,948 brls.    |                |  |  |

|                         |                |  |  |
|-------------------------|----------------|--|--|
| <b>Salt—</b>            |                |  |  |
| Hamburg, 103 bgs.       | Tyne S. S. Co. |  |  |
| <b>Saltpetre—</b>       |                |  |  |
| Hamburg, 22 cks.        | Tyne S. S. Co. |  |  |
| <b>Starch—</b>          |                |  |  |
| Rotterdam, 190 cs.      | Tyne S. S. Co. |  |  |
| Antwerp, 40 32 bxs.     | "              |  |  |
| <b>Tartaric Acid—</b>   |                |  |  |
| Rotterdam, 6 cks.       | Tyne S. S. Co. |  |  |
| <b>Ultramarine—</b>     |                |  |  |
| Rotterdam, 1 cs.        | Tyne S. S. Co. |  |  |
| <b>White Lead—</b>      |                |  |  |
| Antwerp, 28 brls.       | Tyne S. S. Co. |  |  |
| <b>Wood Pulp—</b>       |                |  |  |
| Holmestrand, 1,000 bls. |                |  |  |
| <b>Zinc Oxide—</b>      |                |  |  |
| Antwerp, 30 brls.       | Tyne S. S. Co. |  |  |

## GOOLE.

Week ending April 5th.

|                                           |  |  |  |
|-------------------------------------------|--|--|--|
| <b>Albumen—</b>                           |  |  |  |
| Hamburg, 2 cs.                            |  |  |  |
| <b>Alizarine—</b>                         |  |  |  |
| Rotterdam, 36 cks. 4 cs.                  |  |  |  |
| <b>Alum—</b>                              |  |  |  |
| Rotterdam, 53 bgs.                        |  |  |  |
| <b>Antimony—</b>                          |  |  |  |
| Boulogne, 4 cks.                          |  |  |  |
| <b>Colours—</b>                           |  |  |  |
| Hamburg, 30 cks. 1 cs.                    |  |  |  |
| Ghent, 26                                 |  |  |  |
| <b>Dye stuffs (otherwise undescribed)</b> |  |  |  |
| Boulogne, 55 cks. 14 cs.                  |  |  |  |
| Rotterdam, 172 31                         |  |  |  |
| <b>Farina—</b>                            |  |  |  |
| Hamburg, 1,770 bgs.                       |  |  |  |
| Delfsyzhl, 960                            |  |  |  |
| Harlingen, 125                            |  |  |  |
| <b>Glucose—</b>                           |  |  |  |
| Calais, 100 bgs.                          |  |  |  |
| <b>Logwood—</b>                           |  |  |  |
| Hamburg, 90 t.                            |  |  |  |

|                         |  |  |  |
|-------------------------|--|--|--|
| <b>Pitch—</b>           |  |  |  |
| Rotterdam, 50 cks.      |  |  |  |
| <b>Potash—</b>          |  |  |  |
| Antwerp, 5 cks.         |  |  |  |
| Dunkirk, 37             |  |  |  |
| <b>Saltpetre—</b>       |  |  |  |
| Rotterdam, 100 bgs.     |  |  |  |
| <b>Sodium Silicate—</b> |  |  |  |
| Rotterdam, 1 ck.        |  |  |  |
| <b>Starch—</b>          |  |  |  |
| Ghent, 96 cs.           |  |  |  |
| <b>Waste Salt—</b>      |  |  |  |
| Hamburg, 140 t.         |  |  |  |
| <b>Wood Pulp—</b>       |  |  |  |
| Hamburg, 848 bls.       |  |  |  |
| Rotterdam, 52           |  |  |  |

## GRIMSBY.

Week ending April 11th.

|                                          |  |  |  |
|------------------------------------------|--|--|--|
| <b>Caoutchouc—</b>                       |  |  |  |
| Antwerp, 12 cs.                          |  |  |  |
| Hamburg, 3 bgs. 8                        |  |  |  |
| <b>Chemicals (otherwise undescribed)</b> |  |  |  |
| Hamburg, 10 cks. 1 cs.                   |  |  |  |
| Rotterdam, 10 10                         |  |  |  |
| <b>Colours—</b>                          |  |  |  |
| Antwerp, 33 cks. 2 cs. 4 p               |  |  |  |
| Hamburg, 34 4                            |  |  |  |
| <b>Extracts—</b>                         |  |  |  |
| Dieppe, 25 cks.                          |  |  |  |
| <b>Pitch—</b>                            |  |  |  |
| Dieppe, 20 cks.                          |  |  |  |
| <b>Plumbago—</b>                         |  |  |  |
| Hamburg, 1 ck.                           |  |  |  |
| <b>Saltpetre—</b>                        |  |  |  |
| Rotterdam, 170 bgs.                      |  |  |  |
| <b>Tartar—</b>                           |  |  |  |
| Dieppe, 7 cks.                           |  |  |  |
| <b>Wood Pulp—</b>                        |  |  |  |
| Malmo, 280 bls.                          |  |  |  |

## EXPORTS OF CHEMICAL PRODUCTS

OF

## THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

## LONDON.

Week ending April 15th.

|                                          |        |  |  |
|------------------------------------------|--------|--|--|
| <b>Acids—</b>                            |        |  |  |
| Bombay, 10 cks.                          | £17    |  |  |
| Riga, 3 c.                               | 21     |  |  |
| Auckland, 12                             | 52     |  |  |
| Natal, 24 cs.                            | 47     |  |  |
| <b>Alum—</b>                             |        |  |  |
| Salonica, 173 cks.                       | £158   |  |  |
| <b>Ammonia—</b>                          |        |  |  |
| Cologne, 14 cyldrs.                      | £67    |  |  |
| Rotterdam, 10 drs.                       | 17     |  |  |
| <b>Ammonium Carbonate—</b>               |        |  |  |
| New York, 14 t. 10 c.                    | £430   |  |  |
| Bordeaux, 20 cks.                        | 65     |  |  |
| Paris, 1 9                               | 48     |  |  |
| Wellington, 5 cs.                        | 12     |  |  |
| Rouen, 4 19                              | 150    |  |  |
| <b>Ammonium Chloride—</b>                |        |  |  |
| Auckland, 1 t. 14 c.                     | £35    |  |  |
| Mersyne, 10                              | 18     |  |  |
| Antwerp, 1 2                             | 36     |  |  |
| <b>Ammonium Sulphate—</b>                |        |  |  |
| Barbadoes, 200 t.                        | £1,653 |  |  |
| Bundaberg, 11                            | 400    |  |  |
| Hamburg, 383                             | 2,860  |  |  |
| <b>Anhydrous Ammonia—</b>                |        |  |  |
| Dusseldorf, 21 cyldrs.                   | £90    |  |  |
| <b>Bone Ash—</b>                         |        |  |  |
| Mauritius, 75 t.                         | £260   |  |  |
| <b>Boric Acid—</b>                       |        |  |  |
| B. Ayres, 10 c.                          | £16    |  |  |
| <b>Carbon Bisulphide—</b>                |        |  |  |
| Wellington, 10 c.                        | £10    |  |  |
| <b>Caustic Soda—</b>                     |        |  |  |
| Auckland, 10 t. 10 c.                    | £82    |  |  |
| New York, 4 8                            | 65     |  |  |
| Dunedin, 4                               | 12     |  |  |
| Algoa Bay, 7 3                           | 110    |  |  |
| <b>Chemicals (otherwise undescribed)</b> |        |  |  |
| Bilbao, 9 cs.                            | £55    |  |  |
| Auckland, 22 drs. 21 kgs. 2 pks. 1       | 136    |  |  |
| Algoa Bay, 7                             | 23     |  |  |

|                                    |        |     |  |
|------------------------------------|--------|-----|--|
| Brisbane, 17 c.                    | 46     |     |  |
| Perth, 1 brl.                      | 13     |     |  |
| Christchurch, 17                   | 37     |     |  |
| Durban, 7 drs. 5 cks.              | 4      | 29  |  |
| Melbourne, 20                      | 7      | 28  |  |
| <b>Citric Acid—</b>                |        |     |  |
| Genoa, 1 t.                        | £123   |     |  |
| Rotterdam, 2 5 c.                  | 279    |     |  |
| Hamburg, 37 kgs.                   | 2      | 250 |  |
| Antwerp, 4 cks.                    | 122    |     |  |
| Reval, 11                          | 62     |     |  |
| Yokohama, 10                       | 62     |     |  |
| Brisbane, 11                       | 94     |     |  |
| <b>Coal Products—</b>              |        |     |  |
| <b>Alizarine</b>                   |        |     |  |
| Bombay, 70 cks.                    | £295   |     |  |
| <b>Aniline Dyes</b>                |        |     |  |
| Melbourne, 1 cs.                   | £12    |     |  |
| <b>Aniline Oil</b>                 |        |     |  |
| Dunkirk, 5 drs.                    | £170   |     |  |
| Philadelphia, 10                   | 380    |     |  |
| <b>Anthracene</b>                  |        |     |  |
| Cologne, 139 cks.                  | £1,765 |     |  |
| <b>Benzol</b>                      |        |     |  |
| Hamburg, 70 cks. 3 drs.            | £185   |     |  |
| Rotterdam, 395                     | 1,690  |     |  |
| Amsterdam, 26                      | 161    |     |  |
| <b>Carbolic Acid</b>               |        |     |  |
| Antwerp, 3 brls.                   | £6     |     |  |
| Sydney, 10 cks.                    | 24     |     |  |
| Lyttleton, 100 drs.                | 27     |     |  |
| Yokohama, 20                       | 63     |     |  |
| Cape Town, 1 cs.                   | 12     |     |  |
| <b>Cresote</b>                     |        |     |  |
| New York, 990 cks. 3 cs. 500 brls. | £711   |     |  |
| <b>Naphtha</b>                     |        |     |  |
| Brussels, 10 brls.                 | £20    |     |  |
| Dunedin, 15 drs.                   | 12     |     |  |
| <b>Naphthaline</b>                 |        |     |  |
| Hamburg, 500 bgs.                  | £250   |     |  |
| Gothenburg, 10                     | 5 cks. | 35  |  |
| <b>Pitch</b>                       |        |     |  |
| Baltimore, 553 bgs.                | £101   |     |  |
| Genoa, 1,900 t.                    | 3,750  |     |  |
| Hochfeld, 417                      | 646    |     |  |
| Salonica, 150 brls.                | 72     |     |  |

|                              |           |  |  |
|------------------------------|-----------|--|--|
| Newport News, 995            | 200       |  |  |
| Dunkirk, 475                 | 830       |  |  |
| Boston, 520 cks.             | 310       |  |  |
| Antwerp, 1,632               | 2,983     |  |  |
| Cologne, 6 brls.             | 25        |  |  |
| <b>Pitch and Tar</b>         |           |  |  |
| Newcastle, 10 brls. 10 runs. | £23       |  |  |
| <b>Pyridine Bases</b>        |           |  |  |
| Amsterdam, 8 drs.            | £114      |  |  |
| <b>Tar</b>                   |           |  |  |
| Batoum, 15 brls.             | £33       |  |  |
| Algoa Bay, 265 drs.          | 13        |  |  |
| Adelaide, 300 5 cs.          | 50        |  |  |
| <b>Tar Oil</b>               |           |  |  |
| Stettin, 50 cks.             | £30       |  |  |
| <b>Toluol</b>                |           |  |  |
| Hamburg, 117 cks.            | £436      |  |  |
| <b>Copper Sulphate—</b>      |           |  |  |
| Adelaide, 10 t. 3 c.         | £160      |  |  |
| Launceston, 1                | 17        |  |  |
| Galatz, 1                    | 18        |  |  |
| Marseilles, 155              | 2,808     |  |  |
| Bordeaux, 50                 | 912       |  |  |
| Venice, 19 8                 | 354       |  |  |
| Leghorn, 10                  | 184       |  |  |
| Genoa, 10                    | 184       |  |  |
| Naples, 31 5                 | 572       |  |  |
| Milazzo, 2 10                | 47        |  |  |
| Odessa, 10 3                 | 180       |  |  |
| <b>Copperas—</b>             |           |  |  |
| Salonica, 60 cks.            | £28       |  |  |
| Madras, 9 t. 9 c.            | 18        |  |  |
| <b>Corrosive Sublimate—</b>  |           |  |  |
| Rotterdam, 1 cs.             | £11       |  |  |
| <b>Cream of Tartar—</b>      |           |  |  |
| Launceston, 15 c.            | £72       |  |  |
| Auckland, 5                  | 20        |  |  |
| Dunedin, 10                  | 47        |  |  |
| <b>Disinfectants—</b>        |           |  |  |
| Bombay, 2 drs.               | 3 cs. £21 |  |  |
| Christchurch, 2 cks.         | 12 55     |  |  |
| Melbourne, 6 pks.            | 81 183    |  |  |
| Stockholm, 11 c.             | 15        |  |  |
| Sydney, 14                   | 37        |  |  |
| Macao, 3                     | 17        |  |  |
| Otago, 29                    | 29        |  |  |

|                             |  |  |  |
|-----------------------------|--|--|--|
| <b>Guano—</b>               |  |  |  |
| Mauritius, 24 t.            |  |  |  |
| <b>Magnesia—</b>            |  |  |  |
| Seville, 7 cs.              |  |  |  |
| Montreal, 1 t.              |  |  |  |
| <b>Manure</b>               |  |  |  |
| Barbadoes, 326 t. 10 c.     |  |  |  |
| Auckland, 13                |  |  |  |
| Limon, 5                    |  |  |  |
| Trinidad, 50                |  |  |  |
| S. Kitts, 10                |  |  |  |
| Berlice, 15                 |  |  |  |
| Santos, 30                  |  |  |  |
| Gothenburg, 107             |  |  |  |
| Bruges, 15                  |  |  |  |
| <b>Nitric Acid—</b>         |  |  |  |
| Sydney, 9 cs.               |  |  |  |
| <b>Oxalic Acid—</b>         |  |  |  |
| B. Ayres, 6 c.              |  |  |  |
| <b>Oxygen—</b>              |  |  |  |
| B. Ayres, 3 cs.             |  |  |  |
| <b>Phosphorus—</b>          |  |  |  |
| Sydney, 10 cs. 5 c.         |  |  |  |
| Dunedin, 10 cs.             |  |  |  |
| <b>Potash Crystals—</b>     |  |  |  |
| Calcutta, 10 cks.           |  |  |  |
| <b>Potassium Cyanide—</b>   |  |  |  |
| Bombay, 3 c.                |  |  |  |
| Melbourne, 40 cs.           |  |  |  |
| Sydney, 10                  |  |  |  |
| Algoa Bay, 1                |  |  |  |
| <b>Potassium Prussiate—</b> |  |  |  |
| Bombay, 36 cks.             |  |  |  |
| Philadelphia, 36 cks.       |  |  |  |
| <b>Salicylic Acid—</b>      |  |  |  |
| Algoa Bay, 2 t.             |  |  |  |
| <b>Saltpetre—</b>           |  |  |  |
| Launceston, 1 t.            |  |  |  |
| Melbourne, 2                |  |  |  |
| Newcastle, 1                |  |  |  |
| Sydney, 1                   |  |  |  |
| Madeira, 8 cs.              |  |  |  |
| B. Ayres, 10                |  |  |  |
| Algoa Bay, 9                |  |  |  |



|                    |                 |
|--------------------|-----------------|
| 27 t. 14 c.        | £1,040          |
| 2                  | 10              |
| 1 t. 3 c.          | £9              |
| 1 t.               | £7              |
| 3                  | 20              |
| 54 t. 6 c.         | £116            |
| 7                  | 6               |
| 10 t. 10 c.        | £44             |
| 1                  | 12              |
| 5 cs.              | £21             |
| 1 c.               | £10             |
| 7 t. 7 c.          | £70             |
| 5                  | 30              |
| 235 kgs.           | 105             |
| 20 cs.             | £16             |
| 8                  | 12              |
| 25                 | 19              |
| 6                  | 10              |
| 2 c.               | £14             |
| 5                  | 33              |
| 5                  | 33              |
| 3                  | 25              |
| 6                  | 40              |
| 3                  | 19              |
| <b>ERPOOL.</b>     |                 |
| ending April 15th. |                 |
| 6 t. 18 c.         | £38             |
| 3                  | 17              |
| 5                  | 1               |
| 25                 | 3 q.            |
| 4                  | 8               |
| 4 c.               | £6              |
| 4 cs.              | £3              |
| 1 t.               | £36             |
| 2                  | 67              |
| 6 c.               | 10              |
| 9 c.               | £150            |
| 12 c.              | £5              |
| 7 t. 12            | £64             |
| 25                 | 4               |
| 75                 | 10              |
| 26                 | 1               |
| 15                 | 6               |
| 25                 | 10              |
| 14 t. 14 c.        | £272            |
| 1 t. 5 c.          | £25             |
| <b>Powder—</b>     |                 |
| 24 cks.            |                 |
| 30                 |                 |
| 1,041              |                 |
| 6                  |                 |
| 31                 |                 |
| 48                 |                 |
| 12                 |                 |
| 32                 |                 |
| 118                |                 |
| 25                 |                 |
| ews, 121           | 42 brls. 5 pks. |
| 576                | 25              |
| 40                 |                 |
| Nfld., 20          |                 |
| an, 28             |                 |
| 30 cs.             |                 |
| 39                 |                 |
| 33                 |                 |
| 1 t.               | 3 q.            |
| 10                 | 7 c.            |
| 18                 | 3               |
| 4                  | 3               |
| 1                  | 6               |
|                    | 32              |
| 4 t. 18 c.         | £98             |
| 10                 | 28              |
| 5                  | 2               |
| 1                  | 8               |
|                    | 105             |
|                    | 28              |

|                                          |       |            |
|------------------------------------------|-------|------------|
| Tampico,                                 | 5     | 5          |
| Stockholm,                               | 8     | 16         |
| Bombay,                                  | 5     | 5          |
| Piræus,                                  | 4     | 5          |
| Galatz,                                  | 1     | 20         |
| Venice,                                  | 1     | 25         |
| Rio de Janeiro,                          | 17    | 3          |
| Hamburg,                                 | 2     | 18         |
| Ibraill,                                 | 1     | 4          |
| <b>Calcium Chlorate—</b>                 |       |            |
| Calcutta,                                | 2 t.  | 2 c.       |
| New York,                                | 10    | 4          |
| <b>Carbolic Acid—</b>                    |       |            |
| Odessa,                                  | 1 t.  | 2 c.       |
| New York,                                | 1     | 8          |
| Calcutta,                                | 2     | 9          |
| Hamburg,                                 | 10    | 2          |
| <b>Caustic Potash—</b>                   |       |            |
| New York,                                | 11 t. | 4 c.       |
| <b>Caustic Soda—</b>                     |       |            |
| Adelaide,                                | 25    | bxs.       |
| Alexandria,                              | 18    | dms.       |
| Alicante,                                | 30    |            |
| Amsterdam,                               | 9     |            |
| Ancona,                                  | 90    |            |
| Antwerp,                                 | 19    |            |
| Aracaju,                                 | 10    |            |
| Baltimore,                               | 300   |            |
| Barcelona,                               | 160   | 20 cks.    |
| Bilbao,                                  | 50    |            |
| Boston,                                  | 155   |            |
| Bremen,                                  | 200   | 5 brls.    |
| Calcutta,                                | 40    |            |
| Canterbury,                              | 30    |            |
| Cape Town,                               | 10    |            |
| Cartagena (Sp.),                         | 4     | 60         |
| Dunedin,                                 | 25    | 61 pks.    |
| Galatz,                                  | 107   |            |
| Genoa,                                   | 133   |            |
| Hamburg,                                 | 705   |            |
| Leghorn,                                 | 39    |            |
| Lisbon,                                  | 120   | 2 brls.    |
| Madeira,                                 | 10    |            |
| Malaga,                                  | 65    |            |
| Manila,                                  | 50    |            |
| Melbourne,                               | 23    |            |
| Montreal,                                | 25    |            |
| Naples,                                  | 54    |            |
| N. Orleans,                              | 160   |            |
| Newport News,                            | 100   | 40 bxs.    |
| New York,                                | 433   |            |
| Oporto,                                  | 15    |            |
| Pernambuco,                              | 55    |            |
| Philadelphia,                            | 230   |            |
| Rotterdam,                               | 50    | 4 brls.    |
| St. John, N.B.,                          | 35    |            |
| Samarang,                                | 14    |            |
| San Francisco,                           | 3     | 10 bxs. 10 |
| San Sebastian,                           | 90    |            |
| Savannah,                                | 32    |            |
| Seville,                                 | 250   | 15 cks.    |
| Shanghai,                                | 4     |            |
| Sydney,                                  | 65    |            |
| Tampico,                                 | 33    |            |
| Tarragona,                               | 30    |            |
| Valparaiso,                              | 100   | 25         |
| Arcibo,                                  | 14    |            |
| Baranquilla,                             | 20    |            |
| Odessa,                                  | 40    |            |
| <b>Chemicals (otherwise undescribed)</b> |       |            |
| Singapore,                               | 18 c. | 2 q.       |
| Karachi,                                 | 13 t. | 12         |
| Philadelphia,                            | 10    | 435        |
| Lisbon,                                  | 10    | 10         |
| New York,                                | 5     | 168        |
| Fairwater,                               | 1     | 5          |
| Stettin,                                 | 3     | 18         |
| Hamburg,                                 | 1     | 15         |
| Genoa,                                   | 1     | 37         |
| Naples,                                  | 2     | 74         |
| Bombay,                                  | 4     | 10         |
| <b>China Clay—</b>                       |       |            |
| Antwerp,                                 | 5 t.  |            |
| Baltimore,                               | 30    |            |
| Barcelona,                               | 62    |            |
| Bombay,                                  | 91    | 761 cks.   |
| Bordeaux,                                | 10    |            |
| Naples,                                  | 20    | 10 c.      |
| Portland,                                | 45    |            |
| Rio de Janeiro,                          | 12    |            |
| Boston,                                  | 1,675 | 674        |
| New York,                                |       | 200        |
| <b>Chloride of Lime—</b>                 |       |            |
| Shanghai,                                | 1 t.  | 5 c.       |
| <b>Citric Acid—</b>                      |       |            |
| Vera Cruz,                               | 1 c.  | £7         |
| <b>Coal Products—</b>                    |       |            |
| <b>Aniline Colours</b>                   |       |            |
| Barcelona,                               | 5     | cks.       |
| Salonica,                                | 15    | cs.        |
| <b>Aniline Dyes</b>                      |       |            |
| Barcelona,                               | 2     | cs.        |
| <b>Aniline Oil</b>                       |       |            |
| Barcelona,                               | 10    | cks.       |
| Newport News,                            | 5     | dms.       |

|                            |       |                    |
|----------------------------|-------|--------------------|
| <b>Aniline Salts</b>       |       |                    |
| Boston,                    | 42    | cks. 20 cs. 5 dms. |
| Genoa,                     | 10    |                    |
| <b>Creosote Oil</b>        |       |                    |
| Lisbon,                    | 350   | brls.              |
| <b>Naphtha</b>             |       |                    |
| M. Video,                  | 60    | dms.               |
| <b>Pitch</b>               |       |                    |
| Cadiz,                     | 773   | t.                 |
| Cette,                     | 1,245 |                    |
| Galatz,                    | 55    | brls.              |
| Lagos,                     | 8     |                    |
| Tripoli,                   | 6     |                    |
| Rouen,                     | 2     |                    |
| <b>Tar</b>                 |       |                    |
| Bourgas,                   | 20    | brls.              |
| Ibraill,                   | 80    |                    |
| Kurrachee,                 | 51    | 25 cks.            |
| Philadelphina,             | 150   |                    |
| Puerto Cabello,            | 12    |                    |
| Shanghai,                  | 12    | 8 dms.             |
| Sierra Leone,              | 20    | 20 kgs             |
| Batavia,                   | 30    |                    |
| St. John, N'd.,            | 10    |                    |
| <b>Tar Salts</b>           |       |                    |
| New York,                  | 10    | cks.               |
| <b>Copper Sulphate—</b>    |       |                    |
| Smyrna,                    | 8 c.  | 1 q.               |
| Syria,                     | 8     | 1                  |
| Tarragona,                 | 8     | 1                  |
| Vigo,                      | 2     | 10                 |
| Boston,                    | 22    | 14                 |
| La Pallice,                | 9     | 17                 |
| Bone,                      | 5     | 1                  |
| Oran,                      | 5     | 2                  |
| Bayonne,                   | 19    | 2                  |
| Galatz,                    | 10    | 9                  |
| Halifax,                   | 3     | 7                  |
| Nantes,                    | 76    | 6                  |
| Cadiz,                     | 3     | 3                  |
| Lisbon,                    | 65    | 4                  |
| Seville,                   | 11    | 2                  |
| Brindisi,                  | 30    | 11                 |
| Bari,                      | 27    | 7                  |
| Ancona,                    | 39    | 17                 |
| Paris,                     | 65    | 9                  |
| Bordeaux,                  | 259   | 2                  |
| Catania,                   | 9     | 9                  |
| Venice,                    | 55    | 6                  |
| Cette,                     | 173   | 3                  |
| Oporto,                    | 30    | 2                  |
| Palermo,                   | 2     | 12                 |
| Genoa,                     | 128   | 7                  |
| Naples,                    | 60    | 8                  |
| Algiers,                   | 47    | 19                 |
| Leghorn,                   | 76    | 12                 |
| Barcelona,                 | 10    | 1                  |
| Marseilles,                | 25    | 3                  |
| <b>Copperas—</b>           |       |                    |
| Smyrna,                    | 5 t.  | 5 c.               |
| Kurrachee,                 | 7     | 14                 |
| Beyrout,                   | 3     | 15                 |
| San Francisco,             | 27    | 16                 |
| <b>Disinfectants—</b>      |       |                    |
| Alexandria,                | 1 t.  | 10 c.              |
| Bombay,                    | 4 cs. | 13                 |
| <b>Dried Blood—</b>        |       |                    |
| Las Palmas,                | 15 t. | 18 c.              |
| <b>Extracts—</b>           |       |                    |
| New York,                  | 1 t.  | 3 c.               |
| <b>Gelatine—</b>           |       |                    |
| N. Orleans,                | 230   | bxs.               |
| New York,                  | 300   |                    |
| <b>Hydrochloric Acid—</b>  |       |                    |
| Antofagasta,               | 4     | cs.                |
| <b>Lime—</b>               |       |                    |
| C. C. Castle,              | 6 t.  | 6 c.               |
| Accra,                     | 12    | 12                 |
| Elmina,                    | 6     | 12                 |
| Natal,                     | 7     | 17                 |
| <b>Magnesium Sulphate—</b> |       |                    |
| Hamburg,                   | 10    | cs.                |
| Rangoon,                   | 20    | kgs.               |
| Rio de Janeiro,            | 200   |                    |
| Vera Cruz,                 | 20    |                    |
| Bahia,                     | 10    | brls.              |
| Barbadoes,                 | 100   | bgs.               |
| Piræus,                    | 6     | cks.               |
| Pt. Natal,                 | 40    |                    |
| <b>Manure—</b>             |       |                    |
| Teneriffe,                 | 2 t.  |                    |
| Las Palmas,                | 13    |                    |
| Halifax,                   | 10    |                    |
| Madeira,                   | 2     | 10 c.              |
| <b>Oxalic Acid—</b>        |       |                    |
| Boston,                    | 16 t. | 18 c.              |
| <b>Paist—</b>              |       |                    |
| Algoa Bay,                 | 94    | cs.                |
| Arica,                     | 12    | cks.               |
| Barbadoes,                 | 1     | 1                  |
| Belize,                    | 2     | 50 kgs.            |

|                             |       |
|-----------------------------|-------|
| Bombay,                     | 160   |
| Calcutta,                   | 30    |
| Callao,                     | 199   |
| Cape Town,                  | 9     |
| Cavite,                     | 35    |
| Havana,                     | 1     |
| Lisbon,                     | 24    |
| Malta,                      | 22    |
| Manaos,                     | 3     |
| Mollendo,                   | 6     |
| New York,                   | 23    |
| Ponce,                      | 7     |
| Pram Pram,                  | 64    |
| Puerta Plata,               | 3     |
| Rio Grande,                 | 8     |
| St. Domingo,                | 2     |
| San Jose,                   | 4     |
| San Juan,                   | 9     |
| Shanghai,                   | 1,490 |
| Sierra Leone,               | 4     |
| Tampico,                    | 4     |
| Trieste,                    | 12    |
| Tripoli,                    | 3     |
| Valencia,                   | 3     |
| Valparaiso,                 | 19    |
| Vera Cruz,                  | 3     |
| Conakry,                    | 6     |
| Gd. Bassam,                 | 12    |
| Iquitos,                    | 2     |
| M. Video,                   | 15    |
| Para,                       | 17    |
| Penang,                     | 350   |
| Pt. Said,                   | 7     |
| St. John, N.B.,             | 1     |
| San Francisco,              | 14    |
| Sulina,                     | 1     |
| Talcabano,                  | 14    |
| Vigo,                       | 41    |
| <b>Painters' Colours—</b>   |       |
| Accra,                      | 46    |
| Belize,                     | 5     |
| Bilbao,                     | 1     |
| Boston,                     | 1     |
| B. Ayres,                   | 30    |
| Cape Town,                  | 20    |
| Colon,                      | 1     |
| Guayaquil,                  | 10    |
| Halifax,                    | 13    |
| Ibraill,                    | 4     |
| Johannesburg,               | 40    |
| Kingston, Ja.,              | 16    |
| Manila,                     | 6     |
| Para,                       | 300   |
| St. John, N'd.,             | 6     |
| San Juan, 4 brls.           | 35    |
| Alexandria,                 | 2     |
| Bahia,                      | 5     |
| Bombay,                     | 2,778 |
| Calcutta,                   | 20    |
| Constantinople,             | 2     |
| Galatz,                     | 2     |
| Genoa,                      | 10    |
| Hamburg,                    | 3     |
| Hong Kong,                  | 20    |
| Lisbon,                     | 2     |
| Monrovia,                   | 1     |
| Newport News,               | 526   |
| Salto,                      | 120   |
| <b>Paraffin Wax—</b>        |       |
| Bari,                       | 20    |
| Pernambuco,                 | 6     |
| Tunis,                      | 6     |
| <b>Phosphorus—</b>          |       |
| San Juan, P.R.,             | 5     |
| Hiogo,                      | 2     |
| <b>Potassium Carbonate—</b> |       |
| Newport News,               | 1     |
| <b>Potassium Chlorate—</b>  |       |
| Randers,                    | 1     |
| Calcutta,                   | 1     |
| Copenhagen,                 | 3     |
| Oporto,                     | 8     |
| Hiogo,                      | 10    |
| New York,                   | 27    |
| <b>Salt—</b>                |       |
| Algoa Bay,                  | 5     |
| Antwerp,                    | 215   |
| Axim,                       | 4     |
| Baltimore,                  | 600   |
| Benin,                      | 8     |
| Boma,                       | 6     |
| Boston,                     | 455   |
| B. Ayres,                   | 41    |
| Calcutta,                   | 8,767 |
| Cape Coast,                 | 10    |
| Cape Town,                  | 14    |
| Carleton,                   | 120   |
| Christiania,                | 53    |
| Conakry,                    | 10    |
| Degama,                     | 50    |
| Drewin,                     | 5     |
| Ghent,                      | 200   |
| Gd. Bassa,                  | 1     |



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| <p><b>Halifax</b>, 311<br/> <b>Island</b>, 130<br/> <b>Kingston, Jam.</b>, 10<br/> <b>Kinsebo</b>, 18<br/> <b>Malta</b>, 5<br/> <b>Melbourne</b>, 150<br/> <b>Miramichi</b>, 548<br/> <b>Monrovia</b>, 22<br/> <b>Montreal</b>, 61<br/> <b>Muculla</b>, 8<br/> <b>Newcastle</b>, 194<br/> <b>New York</b>, 135<br/> <b>Old Calabar</b>, 62<br/> <b>Portland</b>, 51<br/> <b>Pt. Natal</b>, 100<br/> <b>Rotterdam</b>, 260<br/> <b>St. John, N.B.</b>, 514<br/> <b>Salt Pond</b>, 12<br/> <b>San Francisco</b>, 1,300<br/> <b>San Juan</b>, 11 cs.<br/> <b>Valparaiso</b>, 502<br/> <b>Wellington</b>, 10<br/> <b>Amsterdam</b>, 150<br/> <b>Barbadoes</b>, 50<br/> <b>Belize</b>, 8<br/> <b>Para</b>, 327<br/> <b>Stockholm</b>, 138<br/> <b>Sydney</b>, 2<br/> <b>Trinidad</b>, 28<br/> <b>Warri</b>, 31</p> <p><b>Salt Cake</b>—<br/> <b>Baltimore</b>, 191 t. 3 c.<br/> <b>Saltpetre</b>—<br/> <b>Tampico</b>, 6 c.<br/> <b>Cartagena</b>, 1 t. 10<br/> <b>Bilbao</b>, 2 10<br/> <b>Mannham</b>, 1 3<br/> <b>Sheep Dip</b>—<br/> <b>Mossamedes</b>, 4 c.<br/> <b>Algoa Bay</b>, 17 t. 3<br/> <b>Pt. Natal</b>, 1 5<br/> <b>Slag</b>—<br/> <b>Valencia</b>, 24 t. 10 c.<br/> <b>Barcelona</b>, 2 15<br/> <b>Soap</b>—<br/> <b>Alexandria</b>, 25 bxs.<br/> <b>Aden</b>, 100<br/> <b>Algoa Bay</b>, 1,975<br/> <b>Antigua</b>, 25<br/> <b>Axim</b>, 45<br/> <b>Barcelona</b>, 300<br/> <b>Beira</b>, 200<br/> <b>Belize</b>, 600<br/> <b>Bombay</b>, 500<br/> <b>Cabenda</b>, 100<br/> <b>Cairo</b>, 16<br/> <b>Cameroons</b>, 224<br/> <b>Cape Coast</b>, 200<br/> <b>Cape Palmas</b>, 60<br/> <b>Cape Town</b>, 3,740<br/> <b>Cartagena, N.O.</b>, 2<br/> <b>Christiana</b>, 120<br/> <b>Constantinople</b>, 40<br/> <b>Copenhagen</b>, 40<br/> <b>Delagoa Bay</b>, 750<br/> <b>Dixcove</b>, 195<br/> <b>Durban</b>, 1,310<br/> <b>Fiume</b>, 100 brls.<br/> <b>Genoa</b>, 220<br/> <b>Gibraltar</b>, 497<br/> <b>Gd. Lahou</b>, 200<br/> <b>Half Jack</b>, 50<br/> <b>Hamburg</b>, 1,000<br/> <b>Harbour Grace</b>, 75<br/> <b>Havre</b>, 234<br/> <b>Hong Kong</b>, 500<br/> <b>Iquique</b>, 100<br/> <b>Kingston, Jam.</b>, 75<br/> <b>Kinsebo</b>, 150<br/> <b>Kurrachee</b>, 308<br/> <b>Lagos</b>, 422<br/> <b>Las Palmas</b>, 463<br/> <b>Malta</b>, 50<br/> <b>Manaos</b>, 100<br/> <b>Mata di</b>, 210<br/> <b>Mollendo</b>, 2<br/> <b>Montserrat</b>, 31<br/> <b>Mossel Bay</b>, 685<br/> <b>Para</b>, 225<br/> <b>Penang</b>, 5<br/> <b>Piraeus</b>, 8<br/> <b>Pt. Natal</b>, 1,271<br/> <b>Rotterdam</b>, 435<br/> <b>St. Lucia</b>, 60<br/> <b>St. Thomas</b>, 58<br/> <b>Salonica</b>, 25<br/> <b>Salt Pond</b>, 295<br/> <b>Smyrna</b>, 23<br/> <b>Teneriffe</b>, 1,500<br/> <b>Valparaiso</b>, 35<br/> <b>Warri</b>, 500<br/> <b>Zanzibar</b>, 100<br/> <b>Amsterdam</b>, 244<br/> <b>Barbadoes</b>, 100</p> | <p><b>Flonny</b>, 100<br/> <b>Boston</b>, 30 tcs.<br/> <b>Calcutta</b>, 250 bds.<br/> <b>Colombo</b>, 14<br/> <b>Dominica</b>, 25 bxs.<br/> <b>E. London</b>, 3,010<br/> <b>Guayaquil</b>, 22<br/> <b>Macassar</b>, 500<br/> <b>Mauritius</b>, 2,012<br/> <b>New York</b>, 1,756<br/> <b>Old Calabar</b>, 1,900<br/> <b>Opobo</b>, 2,000<br/> <b>Pt. Elizabeth</b>, 2,450<br/> <b>Portland, M.</b>, 9 bds.<br/> <b>Rangoon</b>, 500<br/> <b>St. John's, N.F.</b>, 15<br/> <b>St. Nazaire</b>, 725<br/> <b>Shanghai</b>, 20<br/> <b>Sierra Leone</b>, 110<br/> <b>Sulymah</b>, 80<br/> <b>Trinidad</b>, 4,150<br/> <b>Soda</b>—<br/> <b>Shanghai</b>, 8 cks.<br/> <b>Soda Alkali</b>—<br/> <b>Leghorn</b>, 93 brls.<br/> <b>Liston</b>, 100<br/> <b>Messina</b>, 17<br/> <b>Sydney</b>, 4<br/> <b>Soda Ash</b>—<br/> <b>Alexandria</b>, 6 cks.<br/> <b>Antwerp</b>, 810 bgs.<br/> <b>Bari</b>, 200<br/> <b>Bombay</b>, 28<br/> <b>B. Ayres</b>, 25<br/> <b>Callao</b>, 108<br/> <b>Copenhagen</b>, 100<br/> <b>Gothenburg</b>, 91<br/> <b>Hamburg</b>, 100<br/> <b>Maranham</b>, 20<br/> <b>Melbourne</b>, 10<br/> <b>Montreal</b>, 200<br/> <b>New York</b>, 4,406<br/> <b>Philadelphia</b>, 4,800<br/> <b>Portland, Me.</b>, 25 kgs.<br/> <b>Rio de Janeiro</b>, 15<br/> <b>Rotterdam</b>, 350<br/> <b>Salonica</b>, 20<br/> <b>San Francisco</b>, 210<br/> <b>Smyrna</b>, 240<br/> <b>Stettin</b>, 250<br/> <b>Sydney</b>, 9<br/> <b>Venice</b>, 5<br/> <b>Vera Cruz</b>, 72<br/> <b>Baltimore</b>, 7,911<br/> <b>Boston</b>, 2,115<br/> <b>Para</b>, 10 kgs.<br/> <b>Samarang</b>, 56<br/> <b>Soda Crystals</b>—<br/> <b>Halifax</b>, 50 brls.<br/> <b>Malta</b>, 10 cks.<br/> <b>Montreal</b>, 60<br/> <b>New York</b>, 140<br/> <b>Pernambuco</b>, 30<br/> <b>Philadelphia</b>, 587<br/> <b>Portland, Me.</b>, 400 kgs.<br/> <b>St. John, N.B.</b>, 100<br/> <b>Shanghai</b>, 15<br/> <b>Boston</b>, 140<br/> <b>Pt. Elizabeth</b>, 30<br/> <b>Soda Oxide</b>—<br/> <b>New York</b>, 15 cs.<br/> <b>Sodium Bicarbonate</b>—<br/> <b>Alexandria</b>, 170 kgs. 8 cks. 30 brls.<br/> <b>Algoa Bay</b>, 30<br/> <b>Alicante</b>, 65<br/> <b>Amherst</b>, 20<br/> <b>Antwerp</b>, 18<br/> <b>Baltimore</b>, 75<br/> <b>Barcelona</b>, 100<br/> <b>Beira</b>, 20<br/> <b>Boston</b>, 600<br/> <b>Bourgas</b>, 80<br/> <b>Brindisi</b>, 40<br/> <b>B. Ayres</b>, 100<br/> <b>Calcutta</b>, 500<br/> <b>Canterbury</b>, 50<br/> <b>Catania</b>, 225<br/> <b>Christiana</b>, 35<br/> <b>Constantinople</b>, 55<br/> <b>Dunedin</b>, 150<br/> <b>Genoa</b>, 4<br/> <b>Gd. Canary</b>, 7 brls.<br/> <b>Konigsberg</b>, 102<br/> <b>Kurrachee</b>, 400<br/> <b>Leghorn</b>, 25<br/> <b>Lisbon</b>, 105<br/> <b>Malaga</b>, 40<br/> <b>Malta</b>, 20<br/> <b>Melbourne</b>, 487<br/> <b>Moncton</b>, 100<br/> <b>New Fairwater</b>, 310<br/> <b>Odessa</b>, 600<br/> <b>Paris</b>, 380</p> | <p><b>Passages</b>, 80<br/> <b>Pt. Elizabeth</b>, 25<br/> <b>Portland, Me.</b>, 300<br/> <b>P. Natal</b>, 20<br/> <b>St. John, N.B.</b>, 200<br/> <b>Santiago De Cuba</b>, 5<br/> <b>Santos</b>, 30<br/> <b>Seville</b>, 128 brls.<br/> <b>Stettin</b>, 20<br/> <b>Sydney</b>, 28<br/> <b>Talcahuano</b>, 20<br/> <b>Varna</b>, 40<br/> <b>Vera Cruz</b>, 60<br/> <b>Auckland, N.Z.</b>, 127<br/> <b>Bombay</b>, 200<br/> <b>Cape Town</b>, 5<br/> <b>Smyrna</b>, 50<br/> <b>Sourabaya</b>, 30<br/> <b>Sodium Carbonate</b>—<br/> <b>New York</b>, 168 brls.<br/> <b>Porto Alegre</b>, 20 kgs.<br/> <b>Sodium Chlorate</b>—<br/> <b>New York</b>, 60 kgs.<br/> <b>Boston</b>, 75<br/> <b>Sodium Hyposulphite</b>—<br/> <b>Savannah</b>, 30 kgs.<br/> <b>Sodium Nitrate</b>—<br/> <b>New York</b>, 16 cks.<br/> <b>Sodium Prussiate</b>—<br/> <b>Naples</b>, 4 cks.<br/> <b>Sodium Silicate</b>—<br/> <b>Baltimore</b>, 12 t.<br/> <b>Bilbao</b>, 12 brls.<br/> <b>Corinto</b>, 10<br/> <b>Madeira</b>, 20 cks.<br/> <b>Melbourne</b>, 40<br/> <b>N. Orleans</b>, 64<br/> <b>Oporto</b>, 9<br/> <b>San Francisco</b>, 19<br/> <b>San Sebastian</b>, 32<br/> <b>Tampico</b>, 35<br/> <b>Vigo</b>, 8<br/> <b>Wellington</b>, 20<br/> <b>Sodium Sulphate</b>—<br/> <b>Pt. Said</b>, 5 brls.<br/> <b>Sodium Sulphite</b>—<br/> <b>Hamburg</b>, 17 brls.<br/> <b>Starch</b>—<br/> <b>Alexandria</b>, 3 pks.<br/> <b>Strontium Nitrate</b>—<br/> <b>San Francisco</b>, 1 t. 5 c.<br/> <b>Sulphur</b>—<br/> <b>Bantista</b>, 1 t. 10 c.<br/> <b>Natal</b>, 7 8<br/> <b>Boston</b>, 250 4<br/> <b>Sydney</b>, 7 10<br/> <b>Halifax</b>, 2 10<br/> <b>Sulphuric Acid</b>—<br/> <b>Porto Alegre</b>, 19 c. 1 q.<br/> <b>Antofagasta</b>, 5 cs.<br/> <b>Superphosphates</b>—<br/> <b>St. John, N.B.</b>, 5 t.<br/> <b>Rio de Janeiro</b>, 19 3 c.<br/> <b>Gd. Canary</b>, 5 20<br/> <b>Valencia</b>, 20 35<br/> <b>Tartaric Acid</b>—<br/> <b>Vera Cruz</b>, 1 c.<br/> <b>Varnish</b>—<br/> <b>Barbadoes</b>, 1 ck.<br/> <b>Barcelona</b>, 5 cs.<br/> <b>Johannesburg</b>, 2<br/> <b>Piraeus</b>, 1<br/> <b>Rotterdam</b>, 9<br/> <b>Shanghai</b>, 70<br/> <b>Vigo</b>, 2<br/> <b>Catania</b>, 1<br/> <b>Constantinople</b>, 4<br/> <b>Leghorn</b>, 4</p> |
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|                              |                |         |
|------------------------------|----------------|---------|
| rdam,                        | 23             | 30      |
| holm,                        | 3              | 3       |
| seed Oil—                    | 5              | 12 14   |
| rdam,                        | 1,520 c.       |         |
| erp,                         | 988            |         |
| en,                          | 873            |         |
| hagen,                       | 72             |         |
| g,                           | 100            |         |
| urg,                         | 851            |         |
| sborg,                       | 201            |         |
| rdam,                        | 1,718          |         |
| ote—                         |                |         |
| erp,                         | 50 brls.       |         |
| uffs (otherwise undescribed) |                |         |
| rdam,                        | 1 ck.          |         |
| erp,                         | 2              |         |
| n,                           | 10             |         |
| o,                           | 60 bgs.        |         |
| a,                           | 73 brls.       |         |
| urg,                         | 1 ck.          |         |
| ed Oil—                      |                |         |
| erp,                         | 100 c.         |         |
| und,                         | 33             |         |
| o,                           | 34             |         |
|                              | 40             |         |
| tiansund,                    | 35             |         |
| hagen,                       | 108            |         |
| tiania,                      | 501            |         |
| heim,                        | 18             |         |
| nburg,                       | 7              |         |
| urg,                         | 121            |         |
| York,                        | 250            |         |
| rdam,                        | 52             |         |
| re—                          |                |         |
| urg,                         | 8,112 bgs.     |         |
| n,                           | 1,500          |         |
| al White—                    |                |         |
| n,                           | 50 sks.        |         |
| cha—                         |                |         |
| erp,                         | 6 brls.        |         |
| urg,                         | 58 cks.        |         |
| ers' Colours—                |                |         |
| erdam,                       | 25 cks.        | 4 pks.  |
| erp,                         | 80             | 1       |
| n,                           | 40 dms.        | 1       |
| hagen,                       | 8              | 1 cs. 2 |
| tiania,                      | 1              | 72      |
| g,                           | 23             | 1       |
| h,                           | 1              | 1       |
| urg,                         | 11             | 31      |
| gsberg,                      | 17             |         |
| koping,                      | 9              |         |
| York,                        | 10             |         |
| sa,                          | 69             |         |
| n,                           | 9              |         |
| rdam,                        | 40             | 1 42    |
| holm,                        | 64             | 3       |
| n,                           | 66             | 4       |
| nger,                        |                | 73      |
| erp,                         | 362 t.         |         |
| irk,                         | 247            |         |
| n,                           | 16 bgs. 6 cks. |         |
| en,                          | 407 bgs.       |         |
| hagen,                       | 1 cs.          |         |
| tiania,                      | 2              |         |
| urg,                         | 1              |         |
| York,                        | 200            |         |
| w—                           |                |         |
| rdam,                        | 10 cks.        |         |
| holm,                        | 7              |         |
| rdam,                        | 11 cks.        |         |
| erp,                         | 4              |         |
| gsberg,                      | 3              |         |
| rdam,                        | 15             |         |
| il—                          |                |         |
| rdam,                        | 23 cks.        |         |
| antine—                      |                |         |
| tiansund,                    | 2 cks.         |         |
| go,                          | 10             |         |
| ish—                         |                |         |
| erp,                         | 7 cks. 9 cs.   |         |
| hagen,                       | 1              |         |
| tiania,                      | 1              |         |
| g,                           | 1 4            |         |
| it,                          | 6              |         |
| enburg,                      | 5              |         |
| burg,                        | 10 dms.        | 6 pks.  |
| rdam,                        | 2 cks.         |         |
| holm,                        | 4              |         |
| n,                           | 16             |         |

## GLASGOW.

Week ending April 16th.

|                                   |                 |  |
|-----------------------------------|-----------------|--|
| Acetic Acid—                      |                 |  |
| Bombay,                           | £38             |  |
| Albumen—                          |                 |  |
| New York,                         | £58             |  |
| U.S.A.,                           | 34              |  |
| Ammonium Sulphate—                |                 |  |
| Cullera,                          | 10 t. 4 1/2 c.  |  |
| Valencia,                         | 138 3 1/2       |  |
| Barbadoes,                        | 204 5 1/2       |  |
| Demerara,                         | 166 6 1/2       |  |
| Kingston,                         | 13 8            |  |
| Trinidad,                         | 119 13 1/2      |  |
| Asbestos—                         |                 |  |
| Amsterdam,                        | £18             |  |
| Boracic Acid—                     |                 |  |
| Yokohama,                         | £91             |  |
| Chloride of Lime—                 |                 |  |
| U.S.A.,                           | 7 t. 12 c.      |  |
| Chloroform—                       |                 |  |
| Canada,                           | £25             |  |
| Coal Products—                    |                 |  |
| Antiline Colours                  |                 |  |
| U.S.A.,                           | £65             |  |
| Creosote Oil                      |                 |  |
| U.S.A.,                           | £60             |  |
| Pitch                             |                 |  |
| Bombay,                           | £182            |  |
| Trieste,                          | 535             |  |
| Caen,                             | 261 t.          |  |
| Hamburg,                          | 24 16 c.        |  |
| U.S.A.,                           | 20 2            |  |
| Tar                               |                 |  |
| Norroping,                        | 1,000 brls.     |  |
| Danzig,                           | 58 t. 16 c.     |  |
| Tar Oil                           |                 |  |
| Danzig,                           | 55 t. 1 c.      |  |
| Hamburg,                          | 15 12           |  |
| Coal Products (otherwise undes.)— |                 |  |
| Rotterdam,                        | £240            |  |
| Copperas—                         |                 |  |
| Bombay,                           | £95             |  |
| Cottonseed Oil—                   |                 |  |
| Demerara,                         | 1 t. 13 1/2 c.  |  |
| Dried Blood—                      |                 |  |
| Ghent,                            | 10 t. 2 c.      |  |
| Rouen,                            | 9 19 1/2        |  |
| Dyestuffs (otherwise undescribed) |                 |  |
| Lisbon,                           | £15. 19s.       |  |
| Extracts—                         |                 |  |
| Lisbon,                           | £64             |  |
| Spain,                            | 58              |  |
| Toronto,                          | 137             |  |
| Farina—                           |                 |  |
| Rio de Janeiro,                   | 4 t. 19 1/4 c.  |  |
| Gelatine—                         |                 |  |
| U.S.A.,                           | £261            |  |
| Valparaiso,                       | 23              |  |
| Glucose—                          |                 |  |
| Stockholm,                        | 7 t. 14 c.      |  |
| Iron Sulphate—                    |                 |  |
| Bombay,                           | 13 t. 13 1/2 c. |  |
| Lead Acetate—                     |                 |  |
| Bombay,                           | 5 t. 11 1/4 c.  |  |
| Linseed Oil—                      |                 |  |
| E. London,                        | 14 t.           |  |
| Freemantle,                       | 4 6 c.          |  |
| Hong Kong,                        | 4 16            |  |
| Perth,                            | 3 2 1/2         |  |
| Tientsin,                         | 1 4 1/2         |  |
| M. Video,                         | 1 11 1/4        |  |
| Canada,                           | 5 3 1/2         |  |
| Demerara,                         | 1 15 1/4        |  |
| Trinidad,                         | 2 3             |  |
| Valparaiso,                       | 1               |  |
| Litharge—                         |                 |  |
| Bombay,                           | 1 t. 6 1/4 c.   |  |
| Logwood—                          |                 |  |
| Oporto,                           | £33             |  |
| U.S.A.,                           | 35              |  |
| Manganese—                        |                 |  |
| Rouen,                            | 5 t. 5 c.       |  |
| Rotterdam,                        | 4 3             |  |
| Manure—                           |                 |  |
| Antigua,                          | 5 t.            |  |
| Kingston,                         | 16 18 c.        |  |
| Trinidad,                         | 77 8            |  |
| U.S.A.,                           | 2 10            |  |
| Muriatic Acid—                    |                 |  |
| Bombay,                           | £21             |  |
| Nitric Acid—                      |                 |  |
| Bombay,                           | £152            |  |

## Paint—

|                       |                 |  |
|-----------------------|-----------------|--|
| Algoa Bay,            | £30             |  |
| Hong Kong,            | 20              |  |
| Singapore,            | 39              |  |
| Bombay,               | 83              |  |
| Callao,               | 47              |  |
| Kingston,             | £23. 12s.       |  |
| Puerto Cortes,        | 1 t. 7 c.       |  |
| St. Lucia,            | £29             |  |
| Trinidad,             | 38              |  |
| U.S.A.,               | 40              |  |
| Valparaiso,           | 28              |  |
| Painters' Colours—    |                 |  |
| B. Ayres,             | £84             |  |
| Malta,                | £25. 10s.       |  |
| M. Video,             | £33             |  |
| Christiania,          | 29              |  |
| Rotterdam,            | 15              |  |
| Paraffin Wax—         |                 |  |
| Haiphong,             | £32             |  |
| New York,             | 145             |  |
| Stockholm,            | 6 t. 17 1/4 c.  |  |
| Barcelona,            | 4 19 1/4        |  |
| Fiume,                | 27              |  |
| Gibraltar,            | 120             |  |
| Trieste,              | 22              |  |
| Venice,               | 132             |  |
| Russia,               | 200             |  |
| Arendal,              | 32              |  |
| Phosphoric Acid—      |                 |  |
| Trinidad,             | £88. 17s.       |  |
| Potassium Bichromate— |                 |  |
| Yokohama,             | £200            |  |
| Bombay,               | 149             |  |
| U.S.A.,               | 2,986           |  |
| Ghent,                | 66              |  |
| Rouen,                | 566             |  |
| Rosin Oil—            |                 |  |
| U.S.A.,               | 1 t. 5 1/2 c.   |  |
| Sheep Dip—            |                 |  |
| B. Ayres,             | £141            |  |
| Soap—                 |                 |  |
| Hong Kong,            | 1 t. 16 c.      |  |
| Shanghai,             | 1 19            |  |
| Canada,               | 10              |  |
| Montreal,             | 10              |  |
| Valparaiso,           | 2 4 1/2         |  |
| Sodium Bichromate—    |                 |  |
| Bombay,               | £42             |  |
| U.S.A.,               | 34 t. 12 1/4 c. |  |
| Ghent,                | 3 1/4           |  |
| Rouen,                | 40              |  |
| Starch—               |                 |  |
| Rio de Janeiro,       | 2 t. 5 1/2      |  |
| Sulphuric Acid—       |                 |  |
| Bombay,               | £1,075          |  |
| Trinidad,             | 50              |  |
| Tallow—               |                 |  |
| Lisbon,               | 11 t. 1 c.      |  |
| Oporto,               | 1 1             |  |
| Rotterdam,            | 17 7            |  |
| Treacle—              |                 |  |
| Norroping,            | 160 t. 2 c.     |  |
| Jamaica,              | 1               |  |
| Bergen,               | 4               |  |
| Christiania,          | 36 4            |  |
| Christiansund,        | 11 1/2          |  |
| Drontheim,            | 8 4 1/2         |  |
| White Lead—           |                 |  |
| Gibraltar,            | £35             |  |
| Zinc Ashes—           |                 |  |
| Rotterdam,            | 6 t.            |  |

## TYNE.

Week ending April 11th.

|                     |             |  |
|---------------------|-------------|--|
| Alkali—             |             |  |
| Rotterdam,          | 7 t. 18 c.  |  |
| Venice,             | 6 3         |  |
| Hamburg,            | 3 4         |  |
| Alumina Hydrate—    |             |  |
| Antwerp,            | 4 t. 19 c.  |  |
| Ammonium Carbonate— |             |  |
| Aalborg,            | 11 c.       |  |
| Antimony—           |             |  |
| Rotterdam,          | 3 t.        |  |
| Antwerp,            | 2 10 c.     |  |
| Barium Carbonate—   |             |  |
| Hamburg,            | 5 t.        |  |
| Bleaching Powder—   |             |  |
| Rotterdam,          | 29 t. 18 c. |  |
| Copenhagen,         | 6 1         |  |
| Libau,              | 8 13        |  |
| Venice,             | 16 3        |  |
| Konigsberg,         | 21 16       |  |
| Batoum,             | 5 5         |  |
| Bergen,             | 10 18       |  |
| Hamburg,            | 5 17        |  |
| Antwerp,            | 30 16       |  |

|                                   |              |  |
|-----------------------------------|--------------|--|
| Gothenburg,                       | 15 10        |  |
| Trieste,                          | 2 3          |  |
| Caustic Soda—                     |              |  |
| Copenhagen,                       | 10 t. 3 c.   |  |
| Venice,                           | 30 3         |  |
| Odessa,                           | 10 3         |  |
| Alicante,                         | 8 10         |  |
| Hamburg,                          | 9 6          |  |
| Piræus,                           | 8 14         |  |
| Antwerp,                          | 13 3         |  |
| Copenhagen,                       | 2 18         |  |
| Christiania,                      | 2 18         |  |
| Trieste,                          | 6 19         |  |
| Litharge—                         |              |  |
| Rotterdam,                        | 5 c.         |  |
| Batoum,                           | 5            |  |
| Hamburg,                          | 5 t. 4       |  |
| Antwerp,                          | 11           |  |
| Magnesia—                         |              |  |
| Hamburg,                          | 4 c.         |  |
| Antwerp,                          | 3            |  |
| Manure—                           |              |  |
| Valencia,                         | 359 t.       |  |
| Paint—                            |              |  |
| Hamburg,                          | 1 t. 10 c.   |  |
| Painters' Colours—                |              |  |
| Rotterdam,                        | 13 c.        |  |
| Soap—                             |              |  |
| Copenhagen,                       | 5 c.         |  |
| Soda—                             |              |  |
| Rotterdam,                        | 23 t. 6 c.   |  |
| Venice,                           | 7 19         |  |
| Smyrna,                           | 12 3         |  |
| Constantinople,                   | 32 6         |  |
| Christiania,                      | 5            |  |
| Soda Ash—                         |              |  |
| Konigsberg,                       | 110 t. 17 c. |  |
| Gothenburg,                       | 13 8         |  |
| Laurvig,                          | 10           |  |
| Bergen,                           | 5 4          |  |
| Trieste,                          | 15 8         |  |
| Sodium Silicate—                  |              |  |
| Piræus,                           | 4 t. 13 c.   |  |
| Starch—                           |              |  |
| Copenhagen,                       | 2 c.         |  |
| Sulphur—                          |              |  |
| Antwerp,                          | 5 t.         |  |
| Superphosphate—                   |              |  |
| Trieste,                          | 30 t.        |  |
| White Lead—                       |              |  |
| Copenhagen,                       | 2 t. 16 c.   |  |
| Odessa,                           | 11 14        |  |
| GOOLE.                            |              |  |
| Week ending April 8th.            |              |  |
| Alkali—                           |              |  |
| Boulogne,                         | 2 cks.       |  |
| Benzol—                           |              |  |
| Boulogne,                         | 24 cks.      |  |
| Hamburg,                          | 48           |  |
| Rotterdam,                        | 48           |  |
| Coal Products (otherwise undes.)— |              |  |
| Antwerp,                          | 1 ck.        |  |
| Boulogne,                         | 1 cs.        |  |
| Ghent,                            | 7            |  |
| Hamburg,                          | 16           |  |
| Rotterdam,                        | 102 1        |  |
| Colours—                          |              |  |
| Amsterdam,                        | 12 cks.      |  |
| Boulogne,                         | 1            |  |
| Ghent,                            | 1 dm.        |  |
| Manure—                           |              |  |
| Hamburg,                          | 831 bgs.     |  |
| GRIMSBY.                          |              |  |
| Week ending April 11th.           |              |  |
| Alkali—                           |              |  |
| Rotterdam,                        | 10 cs.       |  |
| Chemicals (otherwise undescribed) |              |  |
| Hamburg,                          | 48 dms.      |  |
| Coal Products (otherwise undes.)— |              |  |
| Dieppe,                           | 91 cks 1 cs. |  |
| Hamburg,                          | 2            |  |
| Colours—                          |              |  |
| Antwerp,                          | 6 cks. 1 cs. |  |
| Gothenburg,                       | 10 dms.      |  |
| Hamburg,                          | 9 1 tin      |  |
| Dyestuffs (otherwise undescribed) |              |  |
| Dieppe,                           | 12 cs.       |  |
| Manure—                           |              |  |
| Esbjerg,                          | 1,020 bgs.   |  |
| Soap—                             |              |  |
| Dieppe,                           | 8 cs.        |  |



## PRICES CURRENT.

WEDNESDAY, APRIL 22ND, 1896.

PREPARED BY MESSRS. HIGGINBOTTOM AND CO., 116, PORTLAND STREET, MANCHESTER.

The values stated are F.O.R. at maker's works, or at usual ports of shipment in U.K. The price in different localities may vary.

## Acids:—

|                                         | £            | s.   | d.      |
|-----------------------------------------|--------------|------|---------|
| Acetic, 25 % and 40 % .. .. .           | per cwt.     | 6/-  | & 9/-   |
| " Glacial .. .. .                       | "            | 10/- |         |
| Arsenic S.G., 2000° .. .. .             | "            | 1    | 2 0     |
| Fluoric .. .. .                         | per lb.      | 0    | 0 3½    |
| Muriatic (Tower Salts), 30° Tw. .. .. . | per bottle   | 0    | 0 10    |
| " (Cylinder), 30° Tw. .. .. .           | "            | 0    | 3 0     |
| Nitric 80° Tw. .. .. .                  | per lb.      | 0    | 0 1½    |
| Nitrous .. .. .                         | "            | 0    | 0 1½    |
| Oxalic .. .. .                          | nett         | 0    | 0 3½    |
| Phosphoric, 1750° .. .. .               | "            | 0    | 1 0     |
| Picric .. .. .                          | "            | 0    | 0 11    |
| Sulphuric (fuming 50 %) .. .. .         | per ton      | 15   | 10 0    |
| " (monohydrate) .. .. .                 | "            | 5    | 10 0    |
| " (Pyrites, 168°) .. .. .               | "            | 3    | 0 0     |
| " " 150° .. .. .                        | "            | 1    | 5 0     |
| " (free from arsenic, 145°) .. .. .     | "            | 1    | 7 6     |
| Sulphurous (solution) S.G. 1025 .. .. . | "            | 3    | 0 0     |
| Tannic (pure) .. .. .                   | per lb.      | 0    | 1 2     |
| Tartaric .. .. .                        | "            | 0    | 1 3     |
| Arsenic, white powdered .. .. .         | nett per ton | 23   | 0 0     |
| Alum (loose lump) .. .. .               | "            | 4    | 12 6    |
| Alumina Sulphate (pure) .. .. .         | "            | 4    | 12 6    |
| Aluminoferrous .. .. .                  | "            | 2    | 7 6     |
| Aluminium .. .. .                       | per lb.      | 0    | 2 10    |
| Ammonia, Anhydrous .. .. .              | "            | 0    | 1 3     |
| " 880=28° B. .. .. .                    | per lb.      | 0    | 0 2½    |
| " =24° B. .. .. .                       | "            | 0    | 0 1½    |
| " Carbonate .. .. .                     | nett         | 0    | 0 3½    |
| " Muriate .. .. .                       | per ton      | 22   | 0 0     |
| " (sal-ammoniac) 1st & 2nd .. .. .      | per cwt.     | 39/- | & 37/-  |
| " Nitrate .. .. .                       | per ton      | 37   | 10 0    |
| " Phosphate .. .. .                     | per lb.      | 0    | 0 6½    |
| " Sulphate (grey) London .. .. .        | per ton      | 8    | 0 0     |
| " (grey) Hull .. .. .                   | "            | 7    | 16 3    |
| Aniline Oil (pure) .. .. .              | per lb.      | 0    | 0 7½    |
| Aniline Salt .. .. .                    | "            | 0    | 0 6½    |
| Antimony .. .. .                        | per ton      | 30   | 10 0    |
| " (tartar emetic) .. .. .               | per lb.      | 0    | 0 9½    |
| " (golden sulphide) .. .. .             | "            | 0    | 0 10    |
| Barium Chloride .. .. .                 | per ton      | 7    | 0 0     |
| " Carbonate (native) .. .. .            | "            | 3    | 10 0    |
| " Sulphate (native levigated) .. .. .   | "            | 42/6 | to 65/- |
| Bleaching Powder, 35 % .. .. .          | nett         | 7    | 0 0     |
| " Liquor, 7 % .. .. .                   | "            | 3    | 10 0    |
| Bisulphide of Carbon .. .. .            | "            | 12   | 10 0    |
| Chromium Acetate (crystal) .. .. .      | per lb.      | 0    | 0 6     |
| Calcium Chloride .. .. .                | per ton      | 2    | 2 6     |
| China Clay (at Runcorn) in bulk .. .. . | "            | 15/- | to 30/- |

## Coal Tar Products and Dyes:—

|                                            |                   |    |       |
|--------------------------------------------|-------------------|----|-------|
| Alizarine (artificial) 20 % .. .. .        | nett per lb.      | 0  | 0 7½  |
| Magenta .. .. .                            | "                 | 0  | 3 9   |
| Anthracene, 30 % A, f.o.b. London .. .. .  | per unit per cwt. | 0  | 0 11½ |
| Benzol, 90 % .. .. .                       | per gallon        | 0  | 1 11  |
| " 50/90 .. .. .                            | "                 | 0  | 1 8   |
| Carbolic Acid (crystallised 40°) .. .. .   | per lb.           | 0  | 0 7½  |
| " (crude 60°) .. .. .                      | per gallon        | 0  | 2 1½  |
| Creosote (ordinary) .. .. .                | "                 | 0  | 0 1   |
| " (filtered for Lucigen light) .. .. .     | "                 | 0  | 0 1½  |
| Crude Naphtha 30 % @ 120° C. .. .. .       | "                 | 0  | 0 8½  |
| Grease Oils, 22° Tw. .. .. .               | per ton           | 2  | 10 0  |
| Pitch, f.o.b. Liverpool or Garston .. .. . | "                 | 1  | 13 0  |
| Solvent Naphtha, 90 % at 160° .. .. .      | per gallon        | 0  | 1 3   |
| " Lucigen " and " Wells " Oils .. .. .     | "                 | 0  | 0 2½  |
| Copper .. .. .                             | per ton           | 44 | 17 6  |
| " Sulphate .. .. .                         | "                 | 17 | 10 0  |
| " Oxide (copper scales) .. .. .            | "                 | 41 | 10 0  |
| Glycerine (crude) .. .. .                  | "                 | 36 | 0 0   |
| " (distilled S.G. 1250°) .. .. .           | "                 | 75 | 0 0   |
| Iodine .. .. .                             | nett, per oz.     | 0  | 0 9   |
| Iron Sulphate (copperas) .. .. .           | per ton           | 1  | 5 0   |
| " Sulphide (antimony slag) .. .. .         | "                 | 2  | 0 0   |
| Lead (sheet) for cash .. .. .              | "                 | 12 | 5 0   |
| " Litharge Flake (ex ship) .. .. .         | "                 | 14 | 10 0  |
| " Acetate (white " ) .. .. .               | "                 | 21 | 10 0  |
| " " brown " ) .. .. .                      | "                 | 16 | 0 0   |
| " Carbonate (white lead) pure .. .. .      | "                 | 16 | 0 0   |
| " Nitrate .. .. .                          | "                 | 19 | 0 0   |

|                                         |            |    |     |
|-----------------------------------------|------------|----|-----|
| Lime, Acetate (brown) (ex ship) .. .. . | per ton    | 4  | 5   |
| " (grey) (ex ship) .. .. .              | "          | 7  | 7   |
| Magnesium (ribbon and wire) .. .. .     | per oz.    | 0  | 2   |
| " Chloride (ex ship) .. .. .            | per ton    | 2  | 7   |
| " Carbonate .. .. .                     | per cwt.   | 1  | 17  |
| " Hydrate .. .. .                       | per ton    | 17 | 0   |
| " Sulphate (Epsom Salts) .. .. .        | per ton    | 2  | 15  |
| Manganese, Sulphate .. .. .             | "          | 16 | 10  |
| " Borate .. .. .                        | per cwt.   | 2  | 15  |
| " Ore, 70 % .. .. .                     | per ton    | 3  | 15  |
| Methylated Spirit, 61° O.P. .. .. .     | per gallon | 0  | 1 8 |
| Naphtha (Wood), Solvent .. .. .         | "          | 0  | 3 0 |
| " " Miscible, 60° O.P. .. .. .          | "          | 0  | 3 6 |

## Oils:—

|                                                            |              |    |       |
|------------------------------------------------------------|--------------|----|-------|
| Cotton-seed .. .. .                                        | per ton      | 17 | 10 0  |
| Linseed .. .. .                                            | "            | 20 | 0 0   |
| Petroleum, American .. .. .                                | per gallon   | 0  | 0 7   |
| Stearine .. .. .                                           | per ton      | 23 | 0 0   |
| Phosphorus (yellow) .. .. .                                | per lb.      | 0  | 2 1   |
| " (red) .. .. .                                            | "            | 0  | 2 8   |
| Potassium (metal) .. .. .                                  | per oz.      | 0  | 3 7   |
| " Bichromate .. .. .                                       | nett per lb. | 0  | 0 4½  |
| " Carbonate, 90% (ex ship) .. .. .                         | per ton      | 17 | 0 0   |
| " Chlorate .. .. .                                         | per lb.      | 0  | 0 4½  |
| " Cyanide, 98% .. .. .                                     | "            | 0  | 1 2½  |
| " Hydrate (Caustic Potash) 90 % .. .. .                    | per ton      | 24 | 10 0  |
| " " (Caustic Potash) 75/80 % .. .. .                       | "            | 20 | 10 0  |
| " " (Caustic Potash) 70/75 % .. .. .                       | "            | 19 | 10 0  |
| " Nitrate (refined) .. .. .                                | per cwt.     | 1  | 1 6   |
| " Permanganate .. .. .                                     | per cwt.     | 3  | 7 6   |
| " Prussiate Yellow .. .. .                                 | per lb.      | 0  | 0 7½  |
| " Sulphate, 90 % (ex ship) .. .. .                         | per ton      | 9  | 15 0  |
| " Muriate, 80 % (do. ) .. .. .                             | "            | 8  | 10 0  |
| Silver (metal) .. .. .                                     | per oz.      | 0  | 2 7   |
| " Nitrate .. .. .                                          | "            | 0  | 2 0   |
| Sodium (metal) .. .. .                                     | per lb.      | 0  | 2 11  |
| " Carb. (refined Soda-ash) 48 % .. .. .                    | nett per ton | 4  | 15 0  |
| " " (Caustic Soda-ash) 48 % .. .. .                        | "            | 4  | 5 0   |
| " " (Carb. Soda-ash) 48% .. .. .                           | "            | 4  | 0 0   |
| " " (Alkali) 58 % .. .. .                                  | "            | 3  | 15 0  |
| " " (Soda Crystals) .. .. .                                | "            | 2  | 0 0   |
| " Acetate (ex-ship) .. .. .                                | "            | 14 | 10 0  |
| " Arseniate, 45 % .. .. .                                  | "            | 15 | 0 0   |
| " Chlorate .. .. .                                         | per lb.      | 0  | 0 6½  |
| " Borate (Borax) .. .. .                                   | net, per ton | 19 | 10 0  |
| " Bichromate .. .. .                                       | per lb.      | 0  | 0 3½  |
| " Hydrate (77 % Caustic Soda) (f.o.b.) net pr. ton .. .. . | "            | 9  | 7 6   |
| " " (74 % Caustic Soda) .. .. .                            | "            | 8  | 7 6   |
| " " (70 % Caustic Soda) .. .. .                            | "            | 7  | 7 6   |
| " " (60 % Caustic Soda) .. .. .                            | "            | 6  | 7 6   |
| " " (60 % Caustic Soda, cream) (f.o.b.) .. .. .            | "            | 6  | 7 6   |
| " Bicarbonate .. .. .                                      | "            | 6  | 10 0  |
| " Hyposulphite .. .. .                                     | "            | 6  | 10 0  |
| " Manganate, 30% .. .. .                                   | "            | 16 | 0 0   |
| " Nitrate (95 %) ex-ship Liverpool .. .. .                 | per cwt.     | 0  | 7 10½ |
| " Nitrite, 98 % .. .. .                                    | per ton      | 30 | 0 0   |
| " Phosphate .. .. .                                        | "            | 13 | 5 0   |
| " Silicate (glass) .. .. .                                 | per ton      | 4  | 10 0  |
| " " (liquid, 100° Tw.) .. .. .                             | "            | 3  | 10 0  |
| " Stannate, 40 % .. .. .                                   | per cwt.     | 3  | 2 9   |
| " Sulphate (Salt-cake) .. .. .                             | per ton      | 1  | 3 0   |
| " " (Glauber's Salts) .. .. .                              | "            | 1  | 10 0  |
| " Sulphide .. .. .                                         | "            | 7  | 10 0  |
| " Sulphite .. .. .                                         | "            | 5  | 15 0  |
| Strontium Hydrate, 100% .. .. .                            | "            | 8  | 0 0   |
| Sulphocyanide Ammonium, 95 % .. .. .                       | per lb.      | 0  | 10 6½ |
| " Barium, 95 % .. .. .                                     | "            | 0  | 0 4½  |
| " Potassium .. .. .                                        | "            | 0  | 0 7   |
| Sulphur (Flowers) .. .. .                                  | per ton      | 6  | 5 0   |
| " (Roll Brimstone) .. .. .                                 | "            | 5  | 10 0  |
| " Brimstone: Best Quality .. .. .                          | "            | 3  | 2 6   |
| Superphosphate of Lime (26%) .. .. .                       | "            | 2  | 17 6  |
| Tallow .. .. .                                             | "            | 21 | 0 0   |
| Tin Crystals .. .. .                                       | per lb.      | 0  | 0 5½  |
| " English Ingots .. .. .                                   | per ton      | 63 | 10 0  |
| Zinc (Spelter) .. .. .                                     | "            | 15 | 15 0  |
| " Chloride (solution, 100° Tw.) .. .. .                    | "            | 5  | 2 6   |



# THE CHEMICAL TRADE JOURNAL AND OIL, PAINT and COLOUR REVIEW.

Publishing Offices: 32, BLACKFRIARS STREET, MANCHESTER.

167.

SATURDAY, MAY 2, 1896.

Vol. XVIII.

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## THE COAL TRADE—PRESENT AND FUTURE.

THE Board of Trade returns continue to improve, and things in trade generally appear to be picking up. On all hands those engaged in industrial enterprise are beginning to take heart once more, and yet once more there is a danger of their newly-born ardour being prematurely damped.

When trade was fairly good the last struggle in the coal trade played sad havoc, and a similar strife would be well-nigh disastrous to trade in its present state of convalescence, yet there is unfortunately good ground for the belief that we are fast approaching another important crisis.

The arrangements fixed by the Board of Conciliation come to an end in July next, and, though the miners and employers both seem to favour the continuance of the Board, it is highly probable that there will be considerable difficulty in arranging the precise functions of the Board in the future. The masters want a kind of sliding scale, to which the men are most determinedly and unanimously opposed. The proceedings at the Nottingham Conference this week show this very clearly. The employees want the rate of wages to remain as they are until January, 1898, and for the Board to have full power between January and August in that year to raise wages to the extent of 15 per cent. The masters will doubtless make a great point of the competition they are suffering in the Federation districts from the non-Federation owners in South Wales and the North country, but the men recognise this also, and evidently consider it is merely an off-set against their own misfortunes in the matter of wages. It is very evident, however, that the closing of the Durham pits in no way terrorised the men in Lancashire and Yorkshire, but, if anything, made them all the more resolute in resisting the reduction in wages which the step was supposed to foreshadow. There are, of course, two sides to the question, but if their figures are dependable it is certainly a strong point to be able to show that a lowering of wages has not resulted in greater prosperity in trade. At present the masters seem to be holding their hand, and although the gravity of the questions under settlement had caused the Board to adjourn once, it was generally felt that nothing like a definite solution of the situation would result at the adjourned meeting held on Thursday, which feeling was evidently correct.

There is, however, another departure looming in the distance, and it is to be hoped that in discussing their points of difference, both men and masters will take cognisance of its probable bearings on the future. We refer to the recent developments in connection with the coal industry in Kent, which have taken definite form in the shape of the Kent Coalfields Syndicate, Limited, with a capital of £200,000.

The history of the Kent coal seams is interesting. In 1875 it was clearly shown that there was abundance of presumptive evidence in favour of the existence of coal in this



county, and the depth was estimated at 1,000 to 1,200 feet. In 1890 this evidence was put to the test, and we took occasion to refer to the possibilities and probabilities of the situation, when it was found that a 2ft. 6in. seam of coal actually did exist near Dover at a depth of about 1,200 feet, and that it was, moreover, good house coal. Since that time the boring has progressed, and has revealed the fact that as many as twelve seams, seven of which were thick enough to pay for working, were situated at lower depths; and finally culminated in the discovery of a 4-ft. seam of excellent coal at a depth of 2,200ft. Some time elapsed between the successful termination of the boring experiments and the present effort to turn the same to commercial advantage but it has now been made, and certainly promises well.

The depth is acknowledged to be above the average, but then the boring has shown that both the *strata* and absence of water troubles are favourable to the successful sinking of deep shafts. Moreover, to do so is not attempting the unknown, for there are pits in this country of 3,000ft. and upwards, while in Belgium pits 3,800ft. deep are being worked daily.

Of course, it is very easy to indulge in day dreams about the rich harvest the new syndicate will probably reap, but leaving such matters to those who have a taste for the deceptive imagery of the brain, and, confining ourselves to hard and uncompromising facts, it is very evident that the syndicate means business, and on a profitable basis. It has gone about the task of acquiring freehold rights in a most discreet, not to say actually secret manner, and in consequence their purchases have been made on much more advantageous terms than if it had been generally known that the outcome of the acquisition of the freehold would be the formation of a company to exploit the coal seams beneath.

Immediate steps are being taken to sink two 20 ft. shafts into the 2 ft. 6 in. seam, close to the Shakespeare's Cliff boring, which will thus be reached at 1,138 feet. Concurrently the latest plant will be provided capable of winding 2,500 tons per day.

Judging by comparatively recent experience in Fifeshire, therefore, we have every reason to assume that before the expiration of the proposals now being considered by the Board of Conciliation, this new coalfield will be actively at work, and competing vigorously for its share of commercial support—a fact that we trust will be duly reckoned with when considering the future rôle of this Board.

**SOCIETY OF CHEMICAL INDUSTRY.—London Section.**—The next meeting of the Society will be held at Burlington House on Monday, May 4th, at 8 p.m., when a paper will be read by Mr. Wall on "The Reproduction of Colour Photography," and by Messrs. Cross and Bevan on "Artificial Silk."

**SOCIETY OF CHEMICAL INDUSTRY.—Liverpool Section.**—The last meeting of the Session will be held on Wednesday, May 6th, in the Chemical Laboratories, University College, at 7 30 p.m. There are a number of miscellaneous communications to be presented, while two papers will be read, one by Mr. Orsman on "The Interaction of Carbon Monoxide and Coal Dust," the other by Dr. G. C. Clayton on "Chlorine as a Disinfectant."

**SOCIETY OF CHEMICAL INDUSTRY: Manchester Section.**—The May ordinary meeting of this Section has been postponed until Friday, May 8th, when a discussion of all the papers read before this Section during the Session will be opened by the Chairman at 7 p.m. The papers to be discussed will be found in the journals of the Society for January, February and March. Any member who was present at the reading of these papers, and who cannot attend the discussion, is invited to send any remarks he may wish to make (with a view to publication) to the Chairman at Sandilands, Knutsford, by May 7th.

## Our Book Shelf.

**CYANIDE PROCESS.** By E. B. Wilson. 113 pp. London: Chapman and Hall, Limited. 1896.

This little work aims at providing a review of the present position of the cyanide process, and the various methods that have been tried for the practical winning of gold by the aid of cyanide alone, or in conjunction with electricity.

The chapters on stamp mill work, treatment of bullion, and laboratory work are especially good. The electrolytical processes are dealt with in five separate chapters. The aim of the book is carefully set forth by the author in his introduction, and the explanations therein palliate largely the one-sidedness of the book in some places.

As a review of the cyanide process we can recommend the work to all interested in gold extraction, either in a mining or chemical capacity. It is scarcely so successful or reliable when considered as a review of the patent literature connected with the evolution of the cyanide process, as there is no mention of the Sulman improvements and other latter-day developments. As a whole, however, it may safely be classed as a work of use and merit, well worthy the attention of all users of cyanide processes, for the recovery of gold.

**PRACTICAL INORGANIC CHEMISTRY.** By G. S. Turpin. 156 pp. 61 woodcuts. London: Macmillan and Co. 1895. 2s. 6d.

This elementary handbook is framed upon lines parallel with those followed in the new syllabus of the Department of Science and Art, and evidently aims at teaching chemistry by inculcating experimental investigation and independent observation.

The illustrations are novel and good, as they represent actual apparatus that can be put together by the student in an ordinary laboratory, and are not idealistic pictures. For this reason alone they are more or less educational factors.

After a course of physio-chemical experiments a study of the chief elements and compounds is outlined, everything being taught by a series of exercises to be performed by the student. The deductions are drawn from the student by interrogatory queries, which either conclude or are interpolated in the description of the experiment. The book is therefore exceptionally suited for the use of students who are not wholly self taught.

At the end a description of the chief qualitative tests for the metals is given, along with a scheme of analysis which is not an advance upon the prevailing schemes now in vogue, save in one exception. The student has to prepare all his salts before testing them, and it is a fact that under many of the present systems of chemical education a great number of young but budding chemists are very much at sea when they have to prepare pure salts for themselves. In many respects, therefore, this handbook is a decided improvement upon the average text book of its kind, with which the educational world is lamentably overdone.

**CHEMISTRY FOR ENGINEERS AND MANUFACTURERS.** By H. Blount and A. G. Bloxam. Vol. I. Chemistry of Engineering, Building and Metallurgy. 244 pp., including index. 35 illustrations. London: Charles Griffin and Co. 1896. 10s. 6d.

The book is divided into two parts, the first of which covers the chemistry of constructional materials, sources of energy, steam raising, lubricants and lubrication. The second part deals with metallurgy. The work is essentially a carefully condensed compilation, but in many cases the subjects benefit by this second handling. Thus while elaborate details are avoided a sufficient explanation is given of all the underlying principles of the processes dealt with.

All the sections in the first part are good, especially that on lubricating oils. Stress is advisedly laid on the necessity of specifying the conditions under which the test for flash-point is made. In reference to the measurement of high temperatures, there is much useful information, and the tone of the whole is moderate. The first part also contains a practical and helpful comparison of the efficiencies and preparation of producer gas, water gas, and semi-water gas. The metallurgical section of Part II. is very apparently a digest of Bloxam's well-known work on this subject, and this of itself is sufficient recommendation. Doubtless the method of treatment must be held responsible for the absence of any mention of the electrolytic production of manganese, while we notice that although there is a reference to the Luce-Rosan process of desilverising lead, no mention of the process is made, save in connection with the familiar Pattinson process. Apart from a few such *minutiae*, this first volume is undoubtedly a welcome and fitting harbinger of what should be a still more welcome and interesting completion of the work in Vol. II.



## The Patent List.

This list is compiled from Official sources in the Manchester Laboratory, under the immediate supervision of E. Davis and Alfred R. Davis, who report professionally value of Chemical Patents.

### NOTIFICATIONS FOR ENGLISH LETTERS PATENT.

- aps. W. Donald. 7,756. April 13.  
 duct Manufactured from Sugar, Brown Iron Ore and Sodium  
 de. C. Stahlschmidt. 7,793. April 13.  
 Salt from Brine. W. Shedlock. 7,796. April 13.  
 for Drying White Lead Colours, etc. T. C. Sanderson. 7,868.  
 4. Process of Tanning Hides. V. Gallien. 7,886. April 14.  
 Ammonia and Hydrochloric Acid from Ammonium Chloride.  
 mmer. 7,910. April 15.  
 Sulphurous Anhydride and its Derivatives. J. Enright. 7,969.  
 5. ing Apparatus, chiefly designed for obtaining Salt from Brine.  
 edlock. 7,997. April 15.  
 g Cyanides from Coal Gas. W. Irwin. 8,005. April 16.  
 onsumer for Steam Boilers. C. W. Stauss. 8,048. April 16.  
 Sulphide Ores of Lead, Antimony and Zinc, and Obtaining  
 ous Acid. T. Huntingdon and F. Hebestein. 8,064. April 16.  
 Aluminous Ores and Silicious Compounds. W. T. Whiteman.  
 April 16.  
 Furnace Gases for re-use and Consumption of Smoke. W. H.  
 artland. 8,098. April 16.  
 Treatment. W. D. Scott-Moncrieff. 8,227. April 18.  
 le. C. H. Higbee. 8,236. April 18.

### ABSTRACTS OF LATEST COMPLETE SPECIFICATIONS.

Abstracts are specially prepared for the Chemical Trade Journal, RIGHTS of publication are RESERVED. This is the earliest abstracts of Chemical and allied patents accessible to the

nents connected with the Electrolysis of Chlorides and other and the Evaporation of Brine and other Solutions. H. Tee, Castle-street, Liverpool. Eng. Pat. 6,565. March 30, 1895.

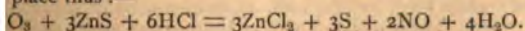
ject is to make the same fuel first evaporate brine and raise high provides power for the generation of electricity, and sub- evaporate more brine in open pans. first place, therefore, closed pans are heated direct, whereby concentrated, and the salt formed is constantly raked out by al means. The steam thus generated is conveyed to a low- engine, which drives a dynamo and a vacuum pump. The rom the engine passes to a condenser, which is really a series laid in shallow open pans, by which means the necessary or the engine is obtained, while more brine is concentrated removal to the closed pans. In order to maintain as good a us possible, water and air are constantly exhausted from the r pipes by the small vacuum pump previously referred to. gases from the closed pans are passed through flues under y open salt pans before passing to the uptake. There are wings

nents connected with the Electrolysis of Chlorides and other and the Evaporation of Solutions. H. Tee, 51, Castle-street, ool. Eng. Pat. 6,565a. March 30, 1895.

s a modification and amplification of the foregoing patent, rs mainly in the generation of the steam in high-pressure say 150 to 200 pounds to the square inch, which steam is used - pressure engine and then passed to closed salt pans charged e. The heat of the steam is thus utilised, while the steam from the closed pans is conveyed to the open pans (described receding patent), where the brine is evaporated at a lower re and coarser-grained salt obtained. Otherwise this patent ntially the same as the above. There are four descriptive

nents in the Manufacture of Zinc Chloride and other Metal lides, applicable also to the Manufacture of Acetate or Sulphate ic. C. H. Hoepfner, formerly of 36, Frankfurterstrasse, Giessen, now elgoländer Ufer, Berlin, Germany. Eng. Pat. 7,560. April 13, 1895.

ulphide ore, such as blende, is heated with a mixture of ric and nitric acids in the presence of air, the acids being of portions, temperature, and concentration as to prevent the of the sulphur liberated, and to prevent the reduction of the es to nitrogen or nitrous oxide. The reaction is represented place thus:—



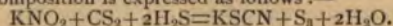
The resulting solution is said to contain from 10 to 20 % of zinc as chloride, which is purified by freezing after neutralisation. If sulphates are required sulphuric acid is substituted for hydrochloric acid. In an analogous manner chlorides of lead, nickel, and iron may be prepared. It is claimed that the free sulphur that results adds greatly to the economy of the process. It is generally advisable to treat the materials first with HCl or H<sub>2</sub>SO<sub>4</sub> so as to dissolve soluble oxides and sulphides, thereby saving nitric acid.

Process for Bleaching Paper Pulp. F. Stehle, 83, Fabrikstrasse, Coeslin, Germany. Eng. Pat. 10,716. May 30, 1895.

The pulp is first treated in the usual way with a small quantity of bleach, so that only a partial bleaching is effected. The pulp is then pressed until it contains about 50 % of moisture, placed in an air-tight receptacle, and treated with chlorine gas. On being taken out of the receptacle it is claimed that a degree of whiteness hitherto unknown is obtained. The process is said to be particularly suitable for certain kinds of rag pulp, and to effect an economy in bleaching material as well as yield a firmer fibre.

Manufacture of Sulphocyanides from Nitrites, Bisulphide of Carbon, and Sulphuretted Hydrogen. O. Imray, 28, Southampton Buildings, London (communicated by Goerlich and Wichmann, 32, Ferdinandstrasse, Hamburg). Eng. Pat. 11,287. June 8, 1895.

It has been found that a satisfactory reaction takes place when one molecule of potassium nitrite, one molecule of carbon bisulphide, and two molecules of sulphuretted hydrogen are heated to about 120° C. in a closed vessel fitted with an agitator. It is advantageous to use the sulphuretted slightly in excess of the theoretical quantity, so as to ensure a complete decomposition. It is advisable to use the nitrite in the form of an aqueous solution. The yield of sulphocyanide and sulphur is claimed to be practically the same as that shown by theory. The sulphur separates in a fused state, cooling into a crystalline crust. The final decomposition is expressed as follows:—



Process for Decomposing Sulphuretted Hydrogen, and Obtaining Ammonia, Compounds of Ammonia, Oxysulphides, Sulphides, and Sulphur. O. Imray, 28, Southampton Buildings, London. (Communicated by Goerlich and Wichmann, 32, Ferdinandstrasse, Hamburg.) Eng. Pat. 10,931. June 1st, 1895.

Sulphuretted hydrogen is decomposed into caustic soda and ammonia, or into ammonium and sodium sulphide compounds by passing the gas into a solution of sodium nitrite. The resulting products depend upon the proportion of sulphuretted hydrogen to the nitrite. Three molecules of hydrogen sulphide to one of nitrite give the former compounds, and five to one the latter series. In each case free sulphur is formed. The re-action is slow at first, but increases as alkaline sulphide is produced. If a portion of the sulphuretted solution is added to a fresh solution of nitrite, the absorption is rapid from the start. In this way gases may be freed from hydrogen sulphide.

## USE OF CALCIUM CARBIDE FOR MOTORS.

AN interesting paper recently appeared in the *Jour. f. Gasbeleuchtung*, in which the use of calcium carbide as a source of acetylene for motors is dealt with by Dr. A. Frank. He suggests that the solid carbide can be used to greater advantage, since it yields the gas so readily with water, and is preferable to acetylene in a compressed state in cylinders. He states that both the Bitterfeld and the Neuhausen works have improved their products up to 90 per cent. yields, and that now a price of 90s. a ton does not look at all unlikely. The theoretical yield of acetylene is 26lbs. per 64lbs. of carbide, and the extra weight, that of the calcium, is a small matter in comparison with the expense and risk of 50 atmosphere cylinders. Curiously enough, the liquefied acetylene obtainable from a quantity of carbide occupies, as nearly as possible, twice the volume of the carbide itself. The data arrived at are, for a 1,000 horse power marine engine worked for 600 hours: Coal, at 1'54lbs. per horse power per hour, 420 tons, occupying a space of 420'430 cubic meters; liquid acetylene, at 0'396lbs. per horse power per hour (Ihering and Slaby), 108 tons, filling cylinders of an aggregate capacity of from 270 to 300 cubic meters, and of sufficient strength to withstand a pressure of 50 atmospheres; carbide of calcium 90 per cent., or 36'56 per cent. of acetylene by weight, total required, 300 tons, occupying 131 cubic meters only. In the last case the necessary protection from damp, etc., would not bring the space occupied up to 150 cubic meters. This is certainly a very remarkable comparison in view of cases where storage capacity is all important; for the whole of the steam boilers would at the same time disappear; but, of course, in the meantime the price of carbide stands in the way of the practical adoption of acetylene for motor purposes.



## Legal Intelligence.

### CHANCERY DIVISION.

#### HIGH COURT OF JUSTICE.

(Before Mr. Justice Chitty.)

FAB. DE PROD. CHIM. DE THANN ET MULHAUSE v. DOMEIER AND COMPANY.

Appearing for the plaintiffs, on a motion of judgment on admissions in the pleadings, Mr. Byrne, Q.C., said that the defendants, by their solicitor's letter of the 21st January, 1896, consented to an injunction and also agreed to pay £50. They submitted that in these circumstances the action was wholly unnecessary, or alternatively that its continuance was unnecessary. The defendants, whilst denying liability, had paid £50. into Court, which they said was sufficient to satisfy the plaintiffs' claim. The action was brought in respect of alleged infringement of a method for the manufacture of a substitute for musk, the letters patent for which was granted to Emil Schnauffer and Albert Baur. On the admissions in the pleadings he now asked for an injunction and £50. damages and costs.

Mr. Justice Chitty: You could not have got an injunction except by applying to the Court.

Mr. Byrne: No.

Mr. Farwell, Q.C., who appeared on the other side, said the defendants had offered to consent to an injunction.

Mr. Byrne: Yes, and I am willing to take it, but the defendants, in a letter, say that the injunction must not be advertised or their name made public in connection with this matter. Nothing about that was mentioned in the pleadings.

Mr. Farwell: That is the whole of the point between us.

Mr. Justice Chitty: By your pleading you waive conditions.

Mr. Farwell: By letters we made conditions.

Mr. Justice Chitty: You waive conditions.

Mr. Farwell: If your lordship thinks so I ask leave to amend the pleadings.

Mr. Justice Chitty: As the defence stands it is as clear as the light of many days. You do not ask leave to refer to the letters in the pleadings. In the pleadings you state an absolute offer. If I give you leave to amend what will happen?

Mr. Farwell: The injunction is subject to their undertaking not to advertise.

Mr. Justice Chitty: If I give you leave to amend plaintiffs might want to amend their motion. I should make you pay the costs of the motion.

Mr. Farwell: Would you do that after the letter?

Mr. Justice Chitty: Yes; I will give you leave to amend on the terms that you pay the costs of the motion.

Mr. Byrne said he would not resist the application to amend, but he asked for the costs of the motion.

Mr. Justice Chitty: I give leave to Mr. Farwell's clients to amend, and I order them to pay the costs of the motion.

Mr. Younger appeared for Mr. Charles Julius Casper, who, it was stated, had admitted liability to indemnify defendants, and who had obtained leave to defend the action.

## INDUSTRIAL DEVELOPMENT IN JAPAN.

THE emancipation of the Japanese from their dependence upon foreign nations for the necessities of life and manufactured goods is, undoubtedly, proceeding rapidly. In connection with textiles the progress has been most pronounced, but in many other ways the same fact is manifested.

Industrial development is largely due to the active instrumentality of Prince Shimazu. Owing to his acquaintance with certain Dutch scientists he built a laboratory on his estate, and devoted his attention to photography, telegraphy, the manufacture of glass and gas. Subsequently he built up an arsenal and foundry combined, in which experiments on explosives were made, and guns manufactured. The work was done under his own personal supervision, with the assistance of Dutch chemists. Hearing that much was to be learned from books, a retainer was sent to Nagasaki to procure all the books obtainable about chemistry and other scientific subjects. These were translated as fast as they came by a schoolmaster who had learned English. An order was also left to the effect that a copy of every scientific publication of importance was to be forwarded in the future. As is usually the case, old methods and hand labour are fast being supplanted by modern processes and machinery. The older artisans remain staunchly conservative, but their resistance is futile, as the rising generation are rapidly falling in with the new régime.

Strikes are not quite unknown, though there have only been two of importance so far. One of these occurred among a railway construction gang, who were hired for certain wages to work six days a week, and were required to work seven without additional compensation. When their protests were unheeded they laid down their tools, and appealed to the police authorities for the enforcement of the law which makes six days a week's labour, and provides that no employee of the Government or any corporation or private individual shall be compelled to work more than six days in a week without extra compensation. Sunday is the usual day of rest in Japan. Its selection is not due to law nor to religious scruples, but to public convenience and perhaps, of respect to foreign nations. When what is known as the six-day law was passed the Government set the example by closing its offices on Sunday, and all other institutions followed suit. That law was originally suggested for sanitary reasons.

The second strike in Japan occurred in Tokio in the summer of 1895. A party of bricklayers engaged in building a factory near Tokio had their hours of labour extended from 12 to 13, because of a desire on the part of the management to complete the job and start the machinery as soon as possible. The men did not object to this increase of time, but asked a corresponding advance of wages, and, as the contractor refused, they left work. He got other bricklayers to take their place, but they were induced to abandon him also, and as he persisted in his refusal to do what the men considered simple justice, it was decided to send emissaries to all the other bricklayers in the city and ask them to join in a sympathetic strike. Public sentiment was aroused by the disturbance, and the contractor who caused the trouble finally compromised with his men and went back to 12 hours' work for 12 hours' pay.

The first genuine foreign factory to be established in Japan was the Osaka Tokei Seizo Kubushiki Kwaisha, familiarly known as the American Watch Company. It was started on 1st January, 1895, and turned out its first finished watch on 10th April. The organiser and promoter of this company was Mr. A. H. Butler, of San Diego, California, who took an outfit of watch-making machinery to Japan, and induced a number of jewellers and watch dealers in Osaka to furnish £33,000 capital to pay the cost of a building and the running expenses of the business.

The highest wages paid to the skilled native workmen in the factory are only 40 sen a day, which is equivalent to 10d. in English money. The lowest wages are 10 sen (2½d.) a day. The capacity of the factory when fully in operation will be 150 watches a day, and owing to the low price of labour, they can be sold at a profit for 50 per cent. less than the market price in Western countries.

A considerable amount of machinery, notably for mining purposes, is being made, but matters are being pushed further, for the Japanese Government recently arranged for the establishment of a steel foundry in Japan with the firm of Sir W. G. Armstrong and Co., of London, on the following terms:—The materials at present to be imported from England; not more than 20 per cent. of the workmen to be English, the balance to be Japanese; if a new arm is invented in England it is to be manufactured also at the Japanese works; a subsidy is provided for a stated number of years, at the expiration of which period the Japanese Government will acquire the works by purchase.

The secret of success lies undoubtedly in large measure in the thoroughness of the people themselves, either in trades or agriculture. For instance, they make all the woodwork about their houses by hand, and most of their houses are entirely of wood. They are very skilful in all kinds of cabinet and joinery work. Their hand-made tools are well adapted for doing close work, and are kept very sharp; besides, they give a great deal more labour and patience to an article than foreign carpenters and cabinet makers. You never see scratches from nicked tools on their planed work. They use very few nails, but mortise almost everything. It is usually so well done that it is difficult to detect the joints, except by the grain, and it lasts for ever. Some of their ships are made without a bit of iron in their composition—everything is mortised.

Every variety of agriculture is carried on, and the soil is in constant use. A couple of acres is considered a large tract of land for farming purposes. Most of the farms are of smaller area, and the crops are greatly diversified. Upon such a little spot of land will be grown almost everything known to the vegetable kingdom—a few square feet of wheat, barley, corn, and millet; a plot of beans perhaps 10 feet wide by 20 feet long, an equal amount of potatoes and peas, and a patch of onions, about as big as a grave; beets, lettuce, turnips, sweet potatoes, and other varieties of cereals and roots occupy the rest of the area.

The farmer overlooks his growing crop every morning, just as an engineer will inspect the movements of his machinery, and if anything is wrong remedies it. If a weed appears in the bean patch he pulls it up; if a hill of potatoes or anything else fails it is immediately replanted. And when he cuts down a tree he always plants another to take its place. The artificial forests of Japan cover many hundreds of



square miles, and by this accuracy, economy, and care the prosperity of the country is permanently assured. As one crop is harvested the soil is worked over, fertilized, and replanted with something else.

The largest area of agricultural land in Japan is devoted to raising rice, perhaps as much as nine-tenths of the whole, and as that crop requires a great deal of water, the paddy-fields are banked up into terraces, one above the other, and divided off into little plats 25 or 30 feet square, with ridges of earth between them to keep the water from flowing away when they are flooded. All farming lands are irrigated by a system that is a thousand years old. Some of the ditches are walled up with bamboo wickerwork and some with tiles and stone.

### BONE-CRUSHING MILL.

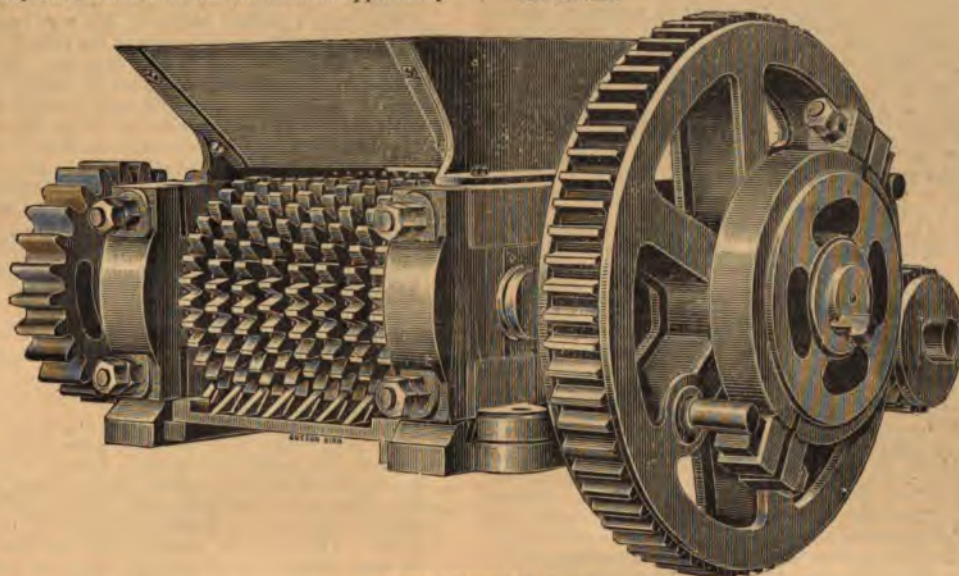
THE steaming of bones with a view to degreasing them before grinding to meal is a process familiar to all connected or acquainted with the fertiliser trade. The digesters of Mr. W. M. Fuller, Jun., of 88, Great Charles-street, Birmingham, for this purpose have long been known to the trade and extensively used both in this country and on the Continent.

In connection with this process there has long been a want for a mill capable of crushing, but not grinding, the bones to a convenient size before degreasing them, and such a mill we now have an opportunity

of the Bill would, he believed, lead to a very general adoption of carriages propelled by mechanical power, and he was informed that at this moment there were persons prepared to put upon the streets of London electrical omnibuses, which, they maintained, would be as safe and convenient in every respect as the existing very popular means of locomotion. With regard to the clause relating to the emission of vapour, he was informed that it was impossible to make a machine which, in some conditions of the atmosphere, would not emit visible vapour, and perhaps the President of the Local Government Board would take this into consideration and introduce some amending words. There was, he thought, a very earnest desire in the country that a Bill of this kind should be passed, and although the Local Government Board were bound to admit that they had drawn this Bill, so to speak, in the dark, owing to the fact that they had had no experience of light locomotives in this country, they believed that the Bill would meet the objections that had been raised to the law as it at present existed, and, at the same time, would give opportunities to manufacturers of experimenting with these machines and possibly of improving them.

Viscount Clifden, while not opposing the Bill, regretted that these mechanically propelled machines were not to be permitted to draw other vehicles. This he considered a great flaw in the Bill, as the machines might otherwise prove of great use to farmers and others in conveying produce and for other purposes.

After some observations from the Earl of Morley, the Bill was read a second time.



BONE-CRUSHING MILL.

of introducing to our readers. The mill is shown in our illustration, and, having been specially designed for the purpose, has been put upon the market by Mr. Fuller, Jun.

There is, therefore, no longer a lack of a mill that will simply crush the bones into comparatively large pieces suitable for extraction, while, at the same time, the use of the mill commends itself on the score of economy, as by this preliminary crushing the degreasing of the bones is effected with greater ease and efficiency.

## Parliamentary Jottings.

### THE LEGALIZATION OF AUTO-CARS.

In the House of Lords last week, Lord Harris moved the second reading of the Locomotives on Highways Bill, which enacts that any Act at present in force restricting the use of locomotives on highways shall not apply to any vehicle propelled by mechanical power if it is under two tons in weight unladen, is not used for the purpose of drawing any other vehicle, and is so constructed that no smoke or visible vapour is emitted therefrom. The Bill was, he explained, a legacy from the late Government, and undoubtedly there was something peculiar in the state of the law relating to locomotives when two Governments thought the matter sufficiently urgent to call for special legislation. Horseless carriages were extensively used on the Continent, but their use in this country was at present hampered by the restrictions which prevailed under the present law. It was somewhat ludicrous that the same provisions should apply to a locomotive of, say, fourteen tons as to one weighing a few hundredweight. The passing

### BUTTER ADULTERATION AT BURY.

In the House of Commons last week, Lord Balcarras asked the Home Secretary whether his attention had been called to a case which came before the borough bench of Bury on the 6th of March, in which the bench refused to grant a summons to the purchaser of adulterated butter, on the ground that the samples had not been submitted to their borough analyst, but to a county analyst; whether he was aware that the town clerk of Bury appeared before the borough bench to oppose the granting of such summons on the same ground; whether the action of the purchaser in relying on the analysis of a county analyst was regular; and whether a borough bench was justified in refusing to deal with a case of adulteration merely on the ground that the analysis had not been made by their borough analyst.

Sir M. Ridley: My attention was first called to this case by the question, but I have communicated with the borough justices, and understand that the facts are as stated in the first two paragraphs. The purchaser subsequently produced a certificate from the borough analyst, and obtained the summons. Whether the magistrates were justified in their action depends on the construction which should be placed on certain sections of the Sale of Food and Drugs Act, 1875. That is a question which can only be authoritatively decided by the court, and on which, therefore, I must decline to express an opinion.

IMPROVEMENT IN THE SALT TRADE.—There has recently been a considerable revival in the Hartlepool salt trade, which languished somewhat during the winter months. At the Greatham works orders have just been received for several large shipments at West Hartlepool, including a cargo of 2,000 tons for India. The workmen, who had been working on half-time, are now in full employment.



## ANTI-PETROLEUM MONOPOLY MOVEMENT IN GERMANY.

THE German Government has already taken the preliminary steps in fighting the foreign petroleum monopoly. The first sessions of the committee appointed to inquire into this matter were held the latter part of last March in the Ministry of the Interior at Berlin. These sessions, however, were only of informal character, and besides the commissioners of the different departments none but experts took part in the deliberations. The chairman of the committee, Dr. Rothe, announced that representatives of commerce and industry would be invited to appear before the committee. The subject will be considered thoroughly, and all parties interested will have ample time and occasion to express their opinion. The purpose of this inquiry is to promote the establishment of a German refining industry by means of suitable tariff regulations. Austria will gladly welcome a new condition of things in Germany. The Galician producers will find a valuable market for their crude product in Germany. Russia will hardly play an important part in supplying the German refineries, as an oil burdened by 65 per cent. of residue could not very well be imported with profit. Thus America would again be the principal source of supply, but in regard to crude oil it is not the Standard Oil Company alone, for the independent producers will compete strongly with this company. Enough German capital will be found to establish refineries, and very little fear is entertained that they would be swallowed up by American refineries, which would probably be erected in Germany. The German oil fields are not so insignificant as is often believed, and the production may be greatly increased by rational methods. Galicia will develop enormously if the German market should be opened to its crude product. Roumania, too, has some chances, yet its participation in supplying Germany will depend upon the prices of the crude oil; it certainly will be obliged to look for new markets, as its export to Austria-Hungary is limited to a certain quantity by treaty.—*Chem. Tech. Zeit.*

## THE MINERAL OIL INQUIRY.

THE Select Committee of the House of Commons in hearing further witnesses had before them Sir Courtenay Boyle, Permanent Secretary to the Board of Trade, whose evidence was to the effect that the law required strengthening in order to guard against the dangers in the carriage of petroleum, and suggested for that purpose legislation on the lines of the Inflammable Liquids Bill, which was brought in originally by Mr. Home Secretary Matthews, especially sections 19 and 20, which provide for control over the transit of petroleum in ships, canals, and railways. The importation of petroleum in tank ships was largely on the increase, while importation in barrel was largely on the decrease. The present Act gave the department no power whatever over a ship after the cargo was discharged, and, therefore, they were unable to make or confirm by-laws for the cleansing of a tank vessel from inflammable vapour, which he believed to be a source of great danger. For this legislation was necessary. With regard to the conveyance of petroleum on railways, American oil companies were having wagons specially built for the carriage of their oil on British railways, but, of course, the Board of Trade had no control over these wagons. He was not aware that there had been any accidents on British railways from the carriage of petroleum.

Mr. G. F. Lyster, C.E., engineer-in-chief to the Mersey Docks and Harbour Board, described the arrangement which he designed for the storage of petroleum on the dock estates at Liverpool and Birkenhead. Superintendent Tozer, chief of the Fire Brigade of Birmingham, stated that in that town the common use of petroleum had led to an increase of fires, especially in small retail shops where petroleum was sold. Lamps had been the most common cause of fire. There was no supervision over these small shopkeepers; he had found oil stored in an underground kitchen near a fire-place. There ought to be supervision over these places. The lamps which had been the chief cause of accidents were of a cheap and fragile character, and could be bought from 6d. upwards. The present standard of 73 degrees flash-point was, in his opinion, much too low for oil kept in a heated room in a small cottage. It ought to be not less than 100 degrees. Inspector Jarrett, chief of the Explosives Department of the Birmingham Corporation, gave confirmatory evidence, and favoured, among other things, extending the powers of the Petroleum Act to the sellers of all classes of petroleum, inspection of the conditions under which it is stored, limitation of the quantity, and the prohibition, after due notice, of the sale of lamps except such as comply with specifications approved by the Secretary of State.

Mr. James H. Gough, secretary to the Thames Conservancy Board, explained the bye-laws laid down by the Conservators with regard to vessels carrying petroleum. These regulations applied only to petro-

leum spirit. The Conservators attached special importance to the ventilation of vessels. General regulations should be framed by the Board of Trade for the guidance of all local authorities. Captain Burnett, chief constable of Wolverhampton, insisted on the great danger arising from the use of cheap lamps, and suggested that all lamps should be stamped. The flash point should be raised to 100 deg. F. Inspector Moncreiff, of Portsmouth, an inspector under the Petroleum Act, said that where the oil or spirit was stored in large quantities it ought to be removed at least 500 yards from dwelling-houses. The raising of the flash point to 100 deg. F. would be some protection against lamp accidents; but he thought it would be impossible to carry out the suggestion to stamp lamps.

Mr. Boverton Redwood, analytical chemist and consulting adviser to the Corporation of the City of London, as the local authority for the city under the Petroleum Acts, in the course of his evidence, described the results of a protracted inquiry carried out some years ago by Colonel Majendie, of the Board of Trade, and himself, as representing the petroleum trade, as to the manner in which the trade was conducted at that time both at home and abroad. It was beyond dispute that they visited in the United Kingdom many places where the storage of mineral oil was carried on under conditions which were undoubtedly dangerous from the point of view that, in the event of the oil becoming involved in a conflagration, there was nothing to prevent the burning liquid from flowing out and destroying neighbouring property. In some instances also the retail sale of the oil was not carried on in a prudent manner. He very much questioned whether the kerosene trade in some parts of the United States could be carried on if the regulations were strictly enforced. He should be sorry to see any scheme passed which could not be rigidly and impartially carried out. Kerosene was a generic term applied to mineral lamp oil. It was first employed in America, but its use had been extended. It was not usually applied to oil derived from Scotch shale, but it was applied to lamp oil manufactured in Russia. It really meant what was known in England as petroleum. The legal definition of petroleum differed from the trade definition, and in order to remove misconception it became the general practice in the trade to employ the term petroleum oil to describe the mineral lamp oil of commerce. With regard to the question of raising the legal flash-point standard, he said his own experience had led him to the opinion that the subject of lamp explosions and proper flashing point did not readily admit of experimental elucidation. Deductions drawn from the comparatively few experiments that could be made might be misleading. Experience had shown that explosions might occur with oil of more than 100 degrees flashing point. It was true that such cases were rare, but they might have been more frequent if such oil had been more largely used under the same conditions as oil of lower test. He suggested that if the Committee would move the Government to apply to the German Government for a report of a recent investigation into lamp accidents and flashing point in Germany, much valuable information would undoubtedly be placed at their disposal. The report in question had not been published, but, though the report might be a private one, he had no doubt the German Government would be willing to lend it for the private use and guidance of this committee. The Chairman said he was much obliged for the suggestion. The witness went on to state that lamp explosions would still be liable to occur with some lamps if a limit of 100 degrees were adopted, and he very much doubted whether raising it to 120 degrees would eliminate the risk. Very much depended on the lamp, and still more on the manner in which the lamp was used. A shade on a lamp very much increased the heat of the oil. Nor was it always the case that the oil became hotter in a metal lamp than in a glass one. Lamps were often used in heated rooms and kitchens where cooking was going on. He remembered investigating a case of a lamp explosion in which the lamp, a glass one, was suspended from the kitchen mantel-piece in front of a fierce fire, even during the day-time, to enable the cook to watch the contents of the saucepans. He believed that simple exclusion from this country of the dangerous lamps made abroad would do much to put an end to lamp explosions. If it was thought subversive of free-trade principles to prohibit the importation of all mineral oil lamps, the inspection of such lamps at the port of arrival to ascertain whether they conformed with certain recognised principles of construction would be a comparatively simple matter. Another aspect of the question which the witness put forward was that, if the standard of flashing-point was raised to 100 or 120 degrees Fahrenheit, the existing sources of supply would be inadequate and the price must go up.

STAMPING PATENT FORMS.—Mr. Jackson, who has been in correspondence with Sir H. Reader Lack, the Controller of the Patent Office, with reference to the stamping of patent and other forms at Inland Revenue offices in the provinces, received the other day a letter informing him that the Board of Inland Revenue have authorised their officers at Leeds to stamp in future any patent, design, and trade-mark forms which may be presented to them by the public for that purpose.



## PRESERVING IRON FROM RUST.

At the last monthly meeting of the Derby Society of Engineers, a paper was read by Mr. F. J. R. Carulla on "The preservation of iron rust." The author illustrated the importance of the subject by the fact that such enormous quantities of rust—exceeding 20 tons by weight in 1866—were taken out from the Britannia Bridge that if that structure would have been doomed to crumble into the sea below. Again, from the new line to London steel and iron were excluded wherever practicable, chiefly owing to the expense that their maintenance entailed. This was not an encouraging prospect for the iron trade or to mechanical engineers. Mr. Carulla went on to deal with the causes of corrosion and the methods adopted to prevent them, dwelling especially on the value of good oil, to which paint owes all its virtues, for the purpose of preservation. Colours, however, would always be used, and hence the necessity of using such as would not spoil the oil. Oxide of iron, which is made in this town, was the article most generally employed for painting iron structures, and a detailed account of its manufacture was given. As tar was frequently used for painting iron, the danger attending its employment in a crude form was made clear by the fact that on some bolts which had been immersed in water contaminated with tar residues.—The Chairman (Mr. T. Berridge), in opening the discussion, remarked on the value of experience as against experiment.

It was in this way that benefit was derived from listening to the papers. He had used oxide of iron paint for woodwork, and found it to answer very well. Lead paint was objectionable where iron gases were present, as it went black. Zinc white formed a substitute in such cases.—Mr. T. Jordan, in proposing a vote of thanks, said he saw no objection to the use of oxide of iron for painting wood. The great point was to see that the oil was pure. In many cases where the paint was condemned it was really the oil that was at fault.—Mr. Peet said he was pleased to hear the vote of thanks proposed by Mr. Jordan. He would like to know whether the scale so injurious to steel and iron plates as they come from the mill could be readily scraped off.—Mr. G. Hyde said the simple immersion in oil of plates for structural purposes was a great advantage in that the examination of the finished work could be effected.—Mr. W. J. Stevens asked whether there was any advantage in treating steel during its manufacture to prevent rust and on when used for boiler construction.—Mr. Carulla, in the course of his reply, said that every effort was made to get the scale away from the plates whilst they were being rolled. It was not an easy matter to get rid of it if once rolled in. Mr. Stevens had put a very interesting question. A case was recorded in which some steel plates were used in an Austrian railway company to be laid below the rails and found to rust with extreme rapidity. An analysis of this steel showed that it contained 1.08 per cent. of sulphur. This was an amount that the steel maker tried to keep out, and for boiler plates his object was to make it as pure as possible.—The proceedings then terminated.

## THE PLYMOUTH GAS WORKS NUISANCE.

At the Royal Hotel, Plymouth, last week, Mr. E. Ridley, Q.C., one of the official referees of the High Court of Justice, sat to decide damages in an action brought by W. O. Ward, proprietor of the Plymouth, Cosside, against the Plymouth and Stonehouse Gas Company. Mr. W. Graham, barrister-at-law (instructed by Wilson and Loye), appeared for Mr. Ward; and Mr. Channel, Q.C., and Mr. H. E. Berridge, barrister-at-law (instructed by Shelly and Johns), for the Gas Company. It was alleged that since October, 1894, the company had neglected to take reasonable precautions to prevent noxious smoke and gas, coal and iron dust, and other injurious matter escaping from the works, spreading and distributing themselves, and settling over the plaintiff's lands and buildings. It was alleged that the nuisance arose when the retorts were working, or the company were using coal or coke, especially when the wind was blowing from a particular quarter, and that the retorts were charged by a process which created an unnecessarily large amount of dust and smoke, which the plaintiffs had not taken measures to consume. After a brief opening by the referee and counsel adjourned to Cosside, and minutely inspected the tannery.

On re-opening the court, Mr. Ward stated that his was a very old established business, which his father acquired in 1865. It was then located in another part of the town, the present site being occupied by the works, which stood on 2½ acres of land, were capable of producing 400 hides a week. When he started there in 1887, and up to 1894, he had nothing to complain of in regard to the Gas Company's works. In 1894 the company erected a new retort house, within a few days of its being worked the nuisance complained of

began. He frequently called the attention of the officers of the company to the great damage he was sustaining. The directors and other persons visited the works frequently.

The Referee: Do you admit the company did their best to mitigate the nuisance? Since the injunction they have, but not previously. The nuisance was greater last winter than during the present one. Witness, in the course of further evidence, said it was essential that the skins should be kept clean. The smoke and coal dust did not interfere much with the liming process, but when the skins were in the tannery, and when taken out of the pits great damage was done. Additional work was entailed by the nuisance. Very frequently work had to be entirely suspended in consequence of the immense quantity of smuts which fell. The discolouration of the leather by the smoke had greatly deteriorated its value. All his present stock was more or less damaged, and he had left the amount of loss to expert witnesses. Had the "liquor" now in the pits not been damaged he should have estimated its value at £3,000. If the nuisance continued it would be impossible for him to carry on the business. Samples of the polluted liquor were handed in, and also dust, &c., taken from the polluting tanks.

On the resumption of the hearing on the Friday, Dr. A. Wynter Blythe, the Medical Officer of Health and Public Analyst for Marylebone, gave evidence as to the result of his examination of dust which had collected in the leather loft of the plaintiff's tannery, and in the tan liquors. In each case he found a considerable proportion of iron, coke, and mineral matter prejudicial to the quality of the leather. In the dust taken from the floor of the loft, there was 9 per cent. of iron; and in that gathered from the butts of leather there was 4 per cent.

Plaintiff was recalled, and was cross-examined at length by Mr. Channell as to the financial transactions of his business and his comparative expenditure on wages, hides, and tannery materials for several years past. He was also cross-examined as to the increased labour involved in the tannery operations owing to the deposition of soot and dust from the gas-works, and the additional cost thereby entailed.

Mr. H. R. Procter, Professor of Chemistry (in the leather industries section) at the Yorkshire College, Leeds, gave further evidence as to the presence of iron and other mineral substances in the dust and tan liquor obtained from plaintiff's works; and he submitted solutions of tanning liquor, showing the deleterious effect of a very small quantity of iron in darkening the tint, and so damaging the colour of the leather.

On the hearing of the case being resumed the following morning, a consultation took place, which ended in the company consenting to a verdict for the plaintiff for £3,500.

## Trade Notes.

**LOW RAILWAY RATES FOR FERTILIZERS.**—It is intimated that specially low rates are either already in operation or can be obtained on application between stations on the Midland Railway for the conveyance of agricultural produce, feeding stuffs, manures, &c., when forwarded in bulk. Applications should be made to either the agents in charge of the company's goods stations or to headquarters.

**SEA-WATER FOR LONDON.**—A conference of delegates from the principal local authorities interested in the London Sea-water Supply Bill, was held last week at St. Martin's Town Hall, Charing Cross. Major Probyn, chairman of the St. Martin's Vestry, presided, and representatives were present from the vestries of Hackney, St. George's, Clerkenwell, St. Luke's, Battersea, Paddington, Bethnal Green, Hammer-smith, Camberwell, Westminster, and St. Pancras, and the Strand Board of Works. A number of amendments to the Bill, drafted for the purpose of safeguarding the interests of the ratepayers and the local authorities, were considered and agreed to, and the conference adjourned.

**AN INTERESTING DYEING CASE.**—At the Salford County Court, on Tuesday, before his Honour Judge Parry, Messrs. Frenkian and Co., of Dickinson street, claimed from Messrs. Mark Fletcher and Sons, dyers, Brindle Heath Works, Pendleton, £11. 9s. 2d., the value of 40 bundles of yarn, which, it was alleged, the defendants had rendered unmarketable by their negligence. Mr. G. Rideal appeared for the plaintiffs, and the defendants were represented by Mr. R. Smith. The case for the plaintiffs was that 40 bundles of yarn were delivered by them to the defendants to be dyed red. When samples of the dyed yarn were sent home it was found that the yarn was not perfectly red, but was flaked with white spots, and therefore unmarketable. It was stated that the yarn was intended to be sent to Roumania, and there made into ladies' bathing costumes. On behalf of the defendants, expert evidence was called to show that the yarn was of such a hard quality that it was impossible for it to be dyed red without the appearance of white spots. Judgment was given for the defendants, with costs.



THE BYE-PRODUCTS OF THE MANCHESTER GASWORKS.—A communication has been received from the Local Government Board acceding to the application of the Corporation for power to borrow a sum of £25,000. for the erection of plant for the manufacture of the residual products of the gasworks. As soon as Parliament has confirmed the approval thus given a beginning will be made with the erection of plant for the manufacture of sulphate of ammonia. The application of the Corporation for power to borrow money for this purpose was, it may be remembered, the subject of an inquiry which extended over several days, the proposal being strongly opposed by a number of chemical manufacturers, including Hardman and Holden, Limited, who have hitherto purchased the bulk of the ammoniacal liquor and other bye-products of the gasworks.

## Market Reports.

### TAR AND AMMONIA PRODUCTS.

Benzols are dull at 2s. for 90's, and 1s. 8d. for 50/90's. Carbolic acids are about the same, 60% crude being quoted 2s. 1d., and 40% crystals 7¼d. There is no change in naphthas, the respective prices for crude and solvent still being 8d and 1s. 3d. Anthracene stands at 10½d. for 30% A, and 9d. for B. Pitch quiet at 32s. 6d. to 33s., f.o.b. East Coast.

There is a decided improvement in sulphate of ammonia, and prices are firmer at all ports. Beckton is quoted £8. 5s. (paid), London outside makes £8. 2s. 6d. to £8. 5s., Liverpool and Hull £8. to £8. 1s. 3d., and Leith £8. 1s. 3d. to £8. 2s. 6d., all prompt.

### LIVERPOOL MINERAL MARKET.

The briskness reported last week has not only continued but increased. Manganese arrivals: There is only one arrival this week, which has gone direct into consumption, whilst stocks are entirely exhausted, and prices are considerably advanced, both for prompt and forward delivery. Ground manganese is stronger, and prices are firmer, in consequence of the raw material being done at higher prices; the ground is now being done at £6., £8., £10., and £15. per ton, according to quality. Manganiferous iron ore continues to arrive slowly, and prices are firm at last quotations. Chrome ore: Arrivals have continued to somewhat increase, but prices are at present unaltered. Bauxite continues in good request, and sells freely at 20s. for firsts, 16s. for seconds, and 12s. for thirds, f.o.b. French chalk is unusually brisk, especially for the higher grades, which are of limited quantity—"Angel White" qualities sell freely at 65s to 70s, 80s. to 90s., and 100s to 110s. per ton, according to grade. Wolfram and scheelite: The market is cleared, and prices are firmer, with little ore to be sold at present. Ferrotungsten and ferro-chromium are unchanged. Arsenic: Prices have somewhat receded, business having been done at £23. 10s. to £25. per ton, according to quantity. Fuller's earth remains steady at 50s. for lump, 55s. for ground, and 75s. per ton for impalpable powder, "Emerald," and other brands. Ochres and umbers continue in fair demand at 40s. per ton for prime umber, and 60s. to 65s. per ton for J.C. ochre. Antifricition ore is quiet at unchanged prices. Pumice-stone is in more request, prime lump being done at £7. 10s. per ton for Teneriffe, and Italian at £10. 10s., with ground at £6. Kieselguhr is in steady demand at unchanged prices. Asbestos and mica are inquired for, and a fair business is done at prices as last quoted. Bog ore is quiet at 22s. 6d. per ton. Magnesite sells slowly. Plumbago continues to meet with a brisk demand, foundry and lubricating qualities being done at £6. to £10. 10s. per ton, according to grade, with prime Ceylon at £15. to £20. per ton. Carbonate and sulphate of barytes are quiet, with no change to report. Molybdenite is in somewhat better demand, cerite, euxenite, orthite, etc., being only quiet.

### MISCELLANEOUS CHEMICAL MARKET.

There are no important changes in the position of any of the main products of the alkali trade. Values remain tolerably steady all round. For bleaching powder export trade is fairly brisk, but home trade is quiet, price, £6. 17s. 6d. to £7. per ton, at makers' works. Chlorate of potash unchanged, at 4¾d. Chlorate of soda, 6d. to 6¼d. Ammonia alkali, 58% without change, at £3. 7s. 6d. per ton, bags, makers' works. Leblanc soda ash, casks, 1d. per deg., f.o.r. Soda crystals, bags, 35s. per ton. Caustic soda rather quiet, and spot quotations are: for 77%, f.o.b. Liverpool, £9. 7s. 6d. per ton; 74%, £8. 7s. 6d.; 70%, £7. 7s. 6d. per ton; 60%, £6. 7s. 6d. Recovered sulphur in good demand, at £3. 12s. 6d. per ton, f.o.r. Sulphate of copper has again advanced to £18. per ton, f.o.b. Saltcake selling freely, at 22s. 6d. to 23s. 6d. per ton, f.o.r. Price of brown acetate of lime is rather lower, at £4. 2s. 6d., c.i.f. Grey acetate of lime rather

firmer. Acetates of lead and soda and acetic acid without change in values. Arsenic still in fair demand, at £22. to £22. 10s. per ton, but some small re-sales made at rather easier rates. For potash, caustic and carbonate, demand continues good, and prices are firm. Ammonia salts and ammonia in generally good request, and prices steady. Yellow prussiate of potash quiet, at 7¼d. Sulphocyanides without change. On the whole trade is reported quiet from the principal centres of the chemical trade.

### LIVERPOOL OIL AND COLOUR MARKET.

WEDNESDAY.

OILS.—Palm oil is steady. The offerings on spot are limited, and sales of Lagos have been made at £18. 15s. and £18. 10s. for May-June delivery. Olive keeps firm, and the better qualities are inclined to improve in values. Holders of linseed are firm, especially for Liverpool makes, at 19s. 9d. to 21s. per cwt. in export casks. Cottonseed is steady, but rather quiet, Liverpool refined being quoted 17s. to 17s. 6d. per cwt. Castor oil is quiet, and all grades are rather dull. Prices are largely nominal, good seconds Calcutta being quoted 2¼d. to 2½d., and first pressure French 2½d. per lb. Tallow is quiet, and shows little signs of an improvement either in demand or prices. Resin is monotonously regular, there being a fair business doing in common and medium at full rates. Spirits of turpentine are very firm, at 22s. 6d. for prompt, there being a difficulty of obtaining adequate supplies even at this price. Petroleum steady: American 6¼d. to 7½d., and Russian refined 5¾d. per gallon.

COLOURS.—Prices are steady, and practically without change. Ochres: Oxfordshire, common, £10., medium, £12., best, £15. Derbyshire, common, 40s.; medium, 50s., best, 60s.; Welsh, best, 90s., seconds, 50s., and common, 18s.; Irish, Devonshire, 40s. to 45s.; French, J.C., 65s. Umber: 40s. to 45s. White lead, £16. Red lead unchanged. Venetian red, £6. to £10. Cobalt: Prepared oxide, 9s. 9d.; black, 9s.; blue, 6s. Oxide of iron: Common, £7.; medium, £10.; finest, £20. Zinc oxide, £22. 10s. to £25.

### REPORT ON MANURE MATERIAL.

There has been no important feature in the market to notice, the business done being on a moderate scale at about last week's prices.

Sales have been made of 75/80% Florida phosphate rock, for summer shipment, at 6¼d. per unit to the Baltic. To the North Sea 6d. per unit would probably be accepted, and a fraction less in cargoes, c.i.f. to good U.K. ports. South Carolina River rock offers at 5½d. c.i.f. good U.K. ports, but this price is rather above the ideas of buyers, who are in no hurry to cover further their next season's requirements.

There is nothing to report in River Plate bones, prices required for summer and autumn shipment precluding business. Bombay bone meal, on spot, offers at £3. 16s. 3d. per ton, and for shipment at £3. 13s. 9d. Crushed Kurrachee bones offer for shipment at £4 per ton, Liverpool or Hull, but do not find buyers.

Nitrate of soda is steady at 7s. 10½d. per cwt. for ordinary quality, and at 8s. for refined. Due cargoes are worth about 7s. 10½d. per cwt.

Home-prepared dried blood is quoted 7s. 6d. per unit, f.o.r. at works, but 7s. 3d. would likely do for good lines.

### THE METAL MARKETS.

LONDON, WEDNESDAY.—Pig iron, firmer: Scotch warrants closed at 46s. 5½d.; Middlesbrough, 38s. 1d. cash, and hematite, 48s. 0½d. Copper, steady: Chili bars, G. O. B.'s and G. M. B.'s, closed at £45. 5s. to £45. 10s. cash, and £45. 11s. 3d. to £45. 16s. 3d. three months. Tin, firm: Straits closed at £59. 15s. to £60. 5s. cash, and £60. 7s. 6d. to £60. 17s. 6d. three months; Australian, £61. 5s. English ingots, £63. 10s. to £64. Lead, steady: Spanish, £11. 1s. 3d.; English, £11. 2s. 6d. to £11. 5s.; Silesian spelter, ordinary, £16. 7s. 6d. Nickel, 1s. 2½d. Antimony, £30. 10 to £30. 10s. Quicksilver, dull: first hands, £6. 15s.; second hands, £6. 14s. Copper shares, steady: Cape, 2½ to 2½; Copiapo, 2 to 2¼; Libiola, 2½ to 2½; Mason and Barry, 3½ to 3½; Rio Tinto, 20½ to 20½; Tharsis, 5½ to 5½.

GLASGOW, WEDNESDAY.—Market quiet and steady. Scotch done at 46s. 6d., 46s. 5d., and 46s. 6d. cash, also at 46s. 7d. and 46s. 8d. one month; closing with buyers at 46s. 5½d. cash; sellers ask 46s. 6d. Cleveland closes with buyers at 38s. 1d. cash, sellers ask 38s. 2d. Cumberland hematite done at 48s. 3d., 48s. 4d., and 48s. 3½d. one month; closing with buyers at 48s. 0½d. cash, sellers ask 48s. 1½d. Middlesbrough hematite closes with buyers at 45s. 6d. cash, sellers ask 45s. 7½d.



## TYNE CHEMICAL REPORT.

TUESDAY.

chemical market is still quiet, though there is perhaps a slight in the demand, and shipments continue fairly good. Prices altered. Soda crystals, £2. 2s. 6d. per ton, gross weight, locally, £3. 17s. 6d. per ton. Caustic, 76/77%, £9. 5s.; 70%, £7. 10s. 15s. per ton.

Whiting powder, softs, £7. 5s. per ton, nett; hards, £7. 10s. per ton, caustic soda, 76/77%, £9. 5s. per ton, nett; do., 70%, £7. 15s. nett; recovered sulphur, 2 cwt. bags, £3. 17s. 6d. per ton, nett; sh., 48%, £4. per ton, nett; do., 52%, £4. 3s. 4d. per ton; do., 56%, £4. 6s. 8d. per ton, nett; alkali, 36%, £2. 15s. nett; white alkali, 48%, £4. 10s. per ton, nett; do., 50%, per ton, nett; do., 52%, £5. per ton, nett; hyposulphite of 7 cwt. casks, £6. 5s. per ton, nett; do., 1 cwt. kegs, £7. nett; silicate of soda, 75° Tw., £2. 12s. 6d. per ton, nett; 80° Tw., £3. per ton, nett; do., 140° Tw., £3. 7s. 6d. per ton, nett; soda crystals, casks, £2. 2s. 6d. per ton, nett; do., 2 cwt. bags, £2. 2s. 6d. per ton, nett weight; of potash, 5d. per lb., less 6%; pearl hardening, per ton, nett; pure white sulphate of alumina, £3. 17s. 6d. nett; blanc fixe, £7. 5s. per ton, nett; chloride of barium, crystals, £6. 15s. per ton, nett; do., 90/95%, crude calcined, per ton, nett; sulphide of barium, crystals, £4. 15s. per ton, nett; of alumina, £30. per ton, nett; aluminate of soda, £30. nett.

South Durham salt is stronger, at 9s. per ton, f.o.b. Tees, increased exports.

LS.—The market generally is unaltered. There is a fair for best steam, and price is steady, at 8s. 3d. to 8s. 6d. per ton, or household coals the demand is falling off, and prices easier. firm, and export shipments increasing. To-day's prices are:—Northumbrian steam, 8s. 3d. to 8s. 6d. per ton; second qualities, to 7s. 6d. per ton; small steam 3s. 6d. to 3s. 9d. per ton; gas 6d. to 6s. 9d. per ton; coke, firm, 15s. to 15s. 6d. per ton.

## WEST OF SCOTLAND CHEMICALS.

GLASGOW, TUESDAY.

It appears to have been a weakening in the general market the past week, but prices are not appreciably affected. The spring shipment business proceeds, but is not in very volume. There has been some talk of giving a better tone to the market by curtailing the production. The Scotch dye and printing works are all very well employed, but the dyers in that dye chemicals are only in limited demand because of sent tendency to light shades chiefly for fabrics. There has welcome variation in sulphate of ammonia within the past few it has been heading upwards, and to-day Leith prompt figure is mineral oils and paraffins are unchanged, except in the case of oil, which is fractionally easier to English and Irish buyers. Use of this is the less firm position of the American petroleum

prices current are:—Soda crystals, £2. 2s. 6d., nett, Tyne; do., 48/56°, £3. 15s. to £4. 15s. nett, Tyne; white alkali, £4. 10s. to £5. nett, Tyne; alum in lump, £5. to £5. 5s. nett; caustic soda, white, 74° £8. 7s. 6d., 70/72° £7. 7s. 6d., 60/62° 6d., and cream 60/62° £6. 7s. 6d., all nett, Liverpool; bleaching £7. nett, Tyne; saltcake, 23s.; borax, English, £20., and boracic acid, £30. nett, Glasgow; bicarbonate of cwt. casks, £6. 10s., and 1-cwt. casks £6. 15s. nett, Liverpool; ate of potash, 4½d. nett, for Scotch and English deliveries (for 4½d. nett, f.o.b. Glasgow); bichromate of soda, 3¼d. nett, for and English deliveries (for export, 3½d. nett, f.o.b. Glasgow); of potash, 5d. less 5%, Liverpool; nitrate of soda, 8s to ; sulphate of ammonia, £8. prompt, f.o.b. Leith; oniac, first and second white, £39. and £37. nett, any port; of copper, £17. 15s. less 5%, Liverpool; paraffin urd, 1½d. and soft, 1½d. to 1½d. per lb.; paraffin wax, 120° ined, 2¾d. to 2¾d. per lb.; paraffin spirit (naphtha), 7d. per paraffin oil (burning) No. 1, 6½d., and crystal, 6¼d., at works, ch buyers (English sales about ¾d. lower); ditto (lubricating) 5., 88° £5. 10s. to £6., and 890/895° £6. to £6. 10s. imports of sugar at Greenock were 52,970 bags cane unrefined 18 bags beet unrefined.

## LL PAINT, OIL, AND COLOUR REPORT.

TUESDAY.

—The demand is well maintained, and markets are more yet prices were not sufficiently low last week to have touched om, for refined cotton oil experienced another fall of about 5s. r, the tone all round is better, and it is a unanimous opinion

that they cannot fall lower. The imports of linseed during the week have been 19,528 quarters, viz.: From River Plate, 12,609 quarters; Bombay, 4,304 quarters; Riga, 2,350 quarters; and Nicolaieff, 250 quarters. Linseed oil, after declining to 17s. 4½d., naked, spot, turned firmer again, closing quiet at last week's quotation of 17s. 7½d.; May-August, 18s. 1½d. to 18s. 3d.; and September-December, 18s. 3d. to 18s. 4½d.; boiled and refined from £1. to £2. per ton extra. Exports or the week, 1,760 cwt. During the week the imports of cottonseed has been 1,761 tons from Alexandria. Refined cotton oil, about 5s. per ton easier, closing at 14s. 9d., naked, spot or month; May-August, 15s. 3d.; casks £1 and ordinary barrels 30s. per ton extra. Export of refined for the week has been 9,520 cwt. Tallow dull, a parcel offering at 18s. Spirits of turpentine firmer. Olive oil anything from £26, ex quay, upwards. Castor oil firm, 2½d. per lb for first pressure. Boiled siccativ oil, £12. per ton. Brown Yorkshire grease, £8. per ton. American cottonseed oil soap, 70% fatty acids, £11. per ton in barrels.

CAKES.—A poor demand for all kinds. Linseed cakes, 95% pure, £5. 17s. 6d. to £6. per ton; Americans, £5. Russians, £5. 12s. 6d.; Oil cakes, £5. Cotton cakes, best makes, £3. 17s. 6d.; seconds, £3. 12s. 6d. to £3. 15s. Rape cakes: East India, £3. 10s.; Black Sea, £2. 10s.

PAINTS.—Makers continue exceptionally busy. Foreign white lead is offered at 16s. 6d. in 5 to 10 ton lots, and English is dearer. Red lead firmer. Oxide of zinc unchanged; dry mineral colours are unaltered; oxide of iron, venetian red, yellow ochre, black, blue, green, &c., ground in oil, from £11. per ton. Ready-mixed paints are strongly competed for, £24. in lever tins; paint remover, £1. 5s. to £1. 10s. per cwt.; imperial black varnish, £5. 10s. per ton in barrels; oak varnish from 5s. 6d. per gallon.

## New Companies.

**Blatchford and Co., Limited.**—CAPITAL £5,000., in shares of £1. each. This company has been formed to manufacture, sell, and deal in paints, varnishes, colours, enamels, japans, red and white leads, etc.

**Matthews's Kentish White Lead Co., Ltd.**—CAPITAL, £35,000., in £1 shares. This company has been formed to carry on the business of lead smelters, desilverisers, chemists, drysalts, &c. The subscribers to the memorandum of association are:—W. Armitage, 29, Lower Belgrave-street, S.W., lieutenant-colonel; L. Bake, 7, Coburg-place, W., gentleman; R. Bedford, "Marston," South Ealing, W., gentleman; A. S. Francis, 2, Berkeley-street, Piccadilly, solicitor; P. Lofts, Oakmere, Potter's Bar, Herts, solicitor; W. S. Griffin, Raby House, Leyland-road, Lee, gentleman; T. J. Kensley, 108, Gaisford-road, Kentish Town, gentleman.

**Red Lion Chalk and Whiting Co., Limited.**—CAPITAL £50,000, in £1 shares. This company has been formed to acquire works and quarries at Northfleet, Kent, and to enter into an agreement between H. J. W. Bartlett and J. W. Barclay. The subscribers to the memorandum of agreement are:—C. J. Smith, Madeira Villas, Woodford, solicitor; J. Dadin, 34, Westlands-road, Clapham, veterinary surgeon; A. Scott, 10, Billingsgate Buildings, E.C., merchant; W. R. Jones, 19, Victoria-road, Norwood, merchant; J. J. Marsh, 4, Cleveland-place, S.W., physician; F. W. Serles, 16, Mark-lane, E.C., bootmaker; F. Champion, 133, Fenchurch-street, E.C., chemist.

**North British Chemical Syndicate, Limited.**—CAPITAL £30,000, in £1 shares, of which 10,000 are preference and 20,000 ordinary. This company has been formed to carry on the business of chemical apparatus manufacturers, chemical manufacturers, etc. Registered office is 45, West Nile-street, Glasgow. The subscribers to the memorandum of association are:—A. M. Shaw, 166, St. Vincent-street, Glasgow, C.A.; D. L. Doran, 12, Windsor-terrace, Kelvinside, Glasgow, clerk; A. S. Brown, Milverton, Lenzie, near Glasgow, clerk; J. M. Jack, 36, Dalhousie-street, Glasgow; A. Lonie, 45, West Nile-street, Glasgow, clerk; D. Dunn, 20, Park Circus, Glasgow, clerk; G. James, 17, Aytoun-road, Pollokshields, Glasgow, clerk.

## Gazette Notices.

## PARTNERSHIP DISSOLVED.

W. HIGHFIELD JONES, W. HALL JONES, and B. H. JONES, enamellers, etc., Wolverhampton and London, under the style of Jones Bros. & Co. and the Enamel Sign Co.

## BANKRUPTCY ACTS, 1883 and 1890.

## Adjudication.

SPAULL, T. H., and SCHLENGEMAN, E. (trading as Meyer, Spaul, and Schlengeman), St. Mary Axe, E.C., chemical merchants.



# IMPORTS OF CHEMICAL PRODUCTS

AT

## THE PRINCIPAL PORTS OF THE UNITED KINGDOM

### LONDON.

Week ending April 18th.

|                                      |                            |  |
|--------------------------------------|----------------------------|--|
| <b>Acetic Acid—</b>                  |                            |  |
| Holland, 188 pks.                    | A. & M. Zimmermann         |  |
| <b>Albumen—</b>                      |                            |  |
| Germany, £30                         | Hicks, Nash & Co.          |  |
| <b>Alum—</b>                         |                            |  |
| Holland, 160 cks.                    | Ohlenschlager              |  |
| " 64                                 | R. W. Greeff & Co.         |  |
| Sydney, 51 t.                        | Saddington & Co.           |  |
| Germany, 1                           | Pickford & Co.             |  |
| <b>Ammonia—</b>                      |                            |  |
| Holland, 1 pk.                       | Little & Johnston          |  |
| " 12 cs.                             | H. Lorenz                  |  |
| <b>Amyl Acetate—</b>                 |                            |  |
| Germany, 1 dm.                       | Stein Bros.                |  |
| <b>Antimony Ore—</b>                 |                            |  |
| Sydney, 7 t.                         | D. W. Greenhough & Son     |  |
| <b>Arsenic—</b>                      |                            |  |
| Germany, 5 cks.                      | Brit. Anti-Fouling Co. Co. |  |
| " 4                                  | T. H. Lee                  |  |
| " 8                                  | F. Stahlschmidt & Co.      |  |
| <b>Asbestos—</b>                     |                            |  |
| Germany, £100                        | Craven & Co.               |  |
| <b>Barytes—</b>                      |                            |  |
| Germany, 94 cks.                     | W. Harrison & Co.          |  |
| Belgium, 34                          | E. J. Diggins              |  |
| Holland, 80                          | W. Harrison & Co.          |  |
| <b>Bone Meal—</b>                    |                            |  |
| E. Indies, 300 t.                    | A. Hunter & Co.            |  |
| " 300                                | A. B. Curtis & Co.         |  |
| <b>Bromine—</b>                      |                            |  |
| Germany, 85 pks.                     | A. & M. Zimmermann         |  |
| <b>Camphor—</b>                      |                            |  |
| Hong Kong, 353 pks.                  | L. & I. D. Jt. Co.         |  |
| Japan, 50 cs.                        | R. Warner & Co.            |  |
| <b>Caoutchouc—</b>                   |                            |  |
| Aden, 29 c.                          | Hale & Son                 |  |
| Zanzibar, 2                          | Clarke & Smith             |  |
| Tamatave, 7                          | J. T. Morton               |  |
| U. S. Col., 43                       | Prop. Bull Wf.             |  |
| Zanzibar, 17                         | Major & Field              |  |
| Rangoon, 188                         | L. & I. D. Jt. Co.         |  |
| Penang, 40                           | Prop. Bull Wf.             |  |
| E. C. Africa, 4                      |                            |  |
| Madagascar, 34                       | Procter Bros.              |  |
| U. S. Col., 120                      | Royal Mail S. Co.          |  |
| Zanzibar, 19                         | Hale & Son                 |  |
| Madagascar, 7                        |                            |  |
| C. America, 33                       | Price, Hickman & Co.       |  |
| E. Indies, 39                        | Ross & Deering             |  |
| U. S. Col., 1                        | Hoare, Wilson & Co.        |  |
| Ecuador, 70                          | L. & I. D. Jt. Co.         |  |
| France, 16                           | H. Johnson & Sons          |  |
| <b>Carbonic Acid—</b>                |                            |  |
| Holland, 131 pks.                    | J. Owen                    |  |
| <b>Castor Oil—</b>                   |                            |  |
| Italy, 2 cs.                         | Beresford & Co.            |  |
| " 5                                  | Warrick Bros.              |  |
| E. Indies, 25                        | Anderson, Weber & Co.      |  |
| Italy, 20                            | H. W. Wright               |  |
| France, 30 brls.                     | R. G. Hall & Co.           |  |
| " 51                                 | Lucas & Spencer's          |  |
| " 60                                 | Wf. Ld.                    |  |
| " 20                                 | Burrell & Co.              |  |
| " 20                                 | Anderson, Weber & Co.      |  |
| <b>Chemicals (otherwise undes.)—</b> |                            |  |
| Belgium, £134                        | T. Palmer                  |  |
| Germany, 5                           | L. & I. D. Jt. Co.         |  |
| Holland, 4                           | Little & Johnston          |  |
| Germany, 170                         | A. & M. Zimmermann         |  |
| " 359                                | T. H. Lee                  |  |
| " 70                                 | Craven & Co.               |  |

|                         |                          |  |
|-------------------------|--------------------------|--|
| Holland, 65             | T. H. Lee                |  |
| Germany, 20             | Petri Bros.              |  |
| " 15                    | Berger, Kahler & Co.     |  |
| Belgium, 10             | Redwood & Son            |  |
| Germany, 10             | Fletcher, Fletcher & Co. |  |
| " 46                    | Domeier & Co.            |  |
| " 13                    | P. W. Harris             |  |
| <b>Cream of Tartar—</b> |                          |  |
| France, 10 cks.         | Ross & Deering           |  |
| Spain, 5                | J. Knill & Co.           |  |
| France, 6               | C. Atkins & Nisbet       |  |
| " 5                     | Vokins & Co.             |  |
| " 22                    | W. C. Bacon & Co.        |  |
| " 7                     | B. & F. Wf. Co.          |  |
| Spain, 47               | Thames S. T. & L. Co.    |  |
| <b>Cresoline—</b>       |                          |  |
| U. States, 27 cs.       | Lunham & Moore           |  |
| <b>Dried Blood—</b>     |                          |  |
| B. Ayres, 213 t.        | Blyth, Greene & Co.      |  |
| <b>Dyestuffs—</b>       |                          |  |
| <b>Annatto</b>          |                          |  |
| Germany, 30 bgs.        | T. H. Lee                |  |
| <b>Argois</b>           |                          |  |
| Portugal, 20 bgs.       | M. de J. Levy & Sons     |  |
| <b>Cochineal</b>        |                          |  |
| Canaries, 2 bgs.        | J. W. Borland            |  |
| " 5                     | G. S. Bruce              |  |
| <b>Cutch</b>            |                          |  |
| Rangoon, 150 bxs.       | Brown & Elmslie          |  |
| E. Indies, 250          | Ross & Deering           |  |
| Rangoon, 500            | Leach & Co.              |  |
| " 250                   | Hoare, Wilson & Co.      |  |
| " 2,975                 | Arracan Co., Ltd.        |  |
| " 450                   | A. Howden & Co.          |  |
| <b>Diyl Diyl</b>        |                          |  |
| E. Indies, 103 bgs.     | Hicks, Nash & Co.        |  |
| " 1,389                 | Culverwell, Brooks & Co. |  |
| U. S. Col., 61          | Royal Mail S. P. Co.     |  |
| Ceylon, 83              | Colombo Com. Co.         |  |
| <b>Extracts</b>         |                          |  |
| Germany, 16 cks.        | Forbes, Abbott & Co.     |  |
| France, 200 bxs.        | T. H. Lee                |  |
| Germany, 200            | Bennett S. S. Co.        |  |
| France, 200             | A. J. Humphery           |  |
| U. States, 120 brls.    | S. M. Frankenstein       |  |
| France, 80 cks.         | M. D. Co.                |  |
| Denmark, 1              | Skillbeck Bros.          |  |
| U. States, 100 bxs.     | Rosenberg, Loewe & Co.   |  |
| " 34 cs.                |                          |  |
| Denmark, 45 pks.        | A. F. White & Co.        |  |
| Germany, 200 bgs.       | A. J. Humphery           |  |
| Durban, 8 pks.          | Boucher, Mortimore & Co. |  |
| <b>Fustic</b>           |                          |  |
| B. W. I., 21 t.         | P. Macfadyen & Co.       |  |
| <b>Gambier</b>          |                          |  |
| Singapore, 219 bls.     | Ross & Deering           |  |
| " 2,072                 | R. & J. Henderson        |  |
| " 449                   | J. Greig                 |  |
| " 1,578                 | Beresford & Co.          |  |
| <b>Indigo</b>           |                          |  |
| E. Indies, 53 chts.     | Ross & Deering           |  |
| " 76                    | Lewis & Peat             |  |
| " 14                    | Blyth, Greene & Co.      |  |
| Ceylon, 11              | L. & I. D. Jt. Co.       |  |
| Nicaragua, 8            | Cotesworth & Powell      |  |
| E. Indies, 19           | H. Johnson & Sons        |  |
| " 63                    | Croisdale & Co.          |  |
| " 22                    | F. Clayton & Co.         |  |
| U. States, 20           | Lewis & Peat             |  |
| E. Indies, 6            | A. Frey & Co.            |  |
| " 11                    | Arbuthnot, Latham & Co.  |  |
| " 15                    | R. von Glehn & Sons      |  |
| " 27                    | Parry & Co.              |  |
| Germany, 2              | T. H. Lee                |  |
| " 49                    | P. Macfadyen & Co.       |  |
| " 67                    | L. & I. D. Jt. Co.       |  |
| <b>Logwood</b>          |                          |  |
| B. W. I., 2 t.          | S. Dobree & Sons         |  |
| " 9                     | Park Macfadyen & Co.     |  |
| <b>Myrabolams</b>       |                          |  |
| E. Indies, 1,366 bgs.   | Hoare, Wilson & Co.      |  |
| " 688                   | L. & I. D. Jt. Co.       |  |

|                        |                                 |  |
|------------------------|---------------------------------|--|
| <b>Saffron</b>         |                                 |  |
| Spain, 1 cs.           | J. H. Fox & Co.                 |  |
| <b>Shumac</b>          |                                 |  |
| U. States, 200 bgs.    | J. Graves                       |  |
| " 200                  | Harris Bros.                    |  |
| Italy, 28              | Hicks, Nash & Co.               |  |
| " 150                  | W. Shelcott                     |  |
| " 25                   | Clark, Gray & Co.               |  |
| " 1,075                | Bevington & Sons                |  |
| <b>Tanner's Bark</b>   |                                 |  |
| Auckland, 8 t.         | Escombe Bros. & Co.             |  |
| Belgium, 56            | Leach & Co.                     |  |
| Auckland, 7            | G. N. Souratry & Co.            |  |
| Melbourne, 26          | Dyster, Nalder & Co.            |  |
| Belgium, 51            | Sawer, Sons & Co.               |  |
| <b>Turneric</b>        |                                 |  |
| E. Indies, 124 bgs.    | L. & I. D. Jt. Co.              |  |
| " 10                   | W. Balchin                      |  |
| <b>Valonia</b>         |                                 |  |
| A. Turkey, 50 t.       | Boucher, Mortimore & Co.        |  |
| " 186                  | Anning & Cobb                   |  |
| " 102                  | Hicks, Nash & Co.               |  |
| " 67                   | J. Graves                       |  |
| <b>Farina—</b>         |                                 |  |
| Holland, 100 bgs.      | J. Barber & Co.                 |  |
| " 100                  | T. H. Lee                       |  |
| " 100                  | Dunlop Bros. & Co.              |  |
| <b>French Chalk—</b>   |                                 |  |
| Italy, £359            | W. Harrison & Co.               |  |
| N. Zealand, 11         | Culverwell, Brooks & Co.        |  |
| <b>Gamboge—</b>        |                                 |  |
| Singapore, 6 cs.       | L. & I. D. Jt. Co.              |  |
| " 14                   | T. Barlow & Bro.                |  |
| <b>Glucose—</b>        |                                 |  |
| U. States, 1,000 pks.  | 1,000 c. Fellows, Morton, & Co. |  |
| " 50                   | 285 c. E. Dixon                 |  |
| " 500                  | 500 Trier, Meyer, & Co.         |  |
| " 500                  | 500 G. Clark & Sons             |  |
| " 200                  | 200 A. E. Piggott               |  |
| " 40                   | 240 Page, Son, & East           |  |
| " 50                   | 304 H. Grey, junr.              |  |
| " 51                   | 310 C. Southwell & Co.          |  |
| " 850                  | 1,340 Deering & Robottom        |  |
| Germany, 55            | 101 Bennett S. S. Co.           |  |
| U. States, 125         | 715 E. & T. Pink                |  |
| " 400                  | 2,315 Ohlenschlager             |  |
| " 125                  | 719 B. S. Co.                   |  |
| " 100                  | 620 Williams, Torrey & Co.      |  |
| " 250                  | 250 Knowle, & Co.               |  |
| " 100                  | 100 C. S. Lovell                |  |
| " 2,710                | 13,053 R. G. Hall & Co.         |  |
| <b>Glue—</b>           |                                 |  |
| " £404                 |                                 |  |
| <b>Manganese—</b>      |                                 |  |
| Japan, 300 t.          | Fellows, Morton, & Co.          |  |
| <b>Manure—</b>         |                                 |  |
| E. Indies, 27 t.       | L. & I. D. Jt. Co.              |  |
| " 50                   | Fox, Roy, & Co.                 |  |
| Germany, 5             | T. H. Lee                       |  |
| Sydney, 97             | F. J. Cornwell, Son,            |  |
| Germany, 50            | F. W. Berk & Co.                |  |
| Holland, 2             | Chemical Works—                 |  |
| Belgium, 50            | J. Gibbs & Co., Ltd.            |  |
| E. Indies, 50          | A. Hunter & Co.                 |  |
| <b>Metallic Oxide—</b> |                                 |  |
| Germany, 11 cks.       | Brit. Anti-Fouling Co. Co.      |  |
| <b>Mica—</b>           |                                 |  |
| E. Indies, £2,113      | W. M. Smith & Sons              |  |
| <b>Mineral White—</b>  |                                 |  |
| Italy, 350 bgs.        | Cape Asbestos Co., Ltd.         |  |
| <b>Molasses—</b>       |                                 |  |
| B.W.I., 13 cks.        | 216 c. Wilkinson & Co.          |  |

|                             |       |                          |
|-----------------------------|-------|--------------------------|
| U. States, 300              | 1,675 | Deering & Roberson       |
| " 150                       | 370   | W. Balchin               |
| " 3                         | 13    | Cuhan S.S. Co.           |
| <b>Nitre—</b>               |       |                          |
| Chili, 21 bgs.              |       | M. D. Co.                |
| <b>Ochre—</b>               |       |                          |
| Holland, 18 pks.            |       | Phillipps & Graves       |
| Italy, 15 cks.              |       | W. Harrison & Co.        |
| France, 39                  |       | W. H. Carey & Son        |
| " 200 brls.                 |       | W. Harrison & Co.        |
| " 115 cks.                  |       | Taylor Bros. & Co.       |
| Spain, 90                   |       | H. Johnson & Son         |
| <b>Phosphate Rock—</b>      |       |                          |
| France, 300 t.              |       | A. Hunter & Co.          |
| Algeria, 1,380              |       | J. Gibbs & Co.           |
| Aruba, 876                  |       | G. M. Baum               |
| Belgium, 100                |       | West & Penrose           |
| <b>Pitch—</b>               |       |                          |
| U. States, 31 brls.         |       | Dussek Bros. & Co.       |
| " 34                        |       | L. & I. D. Jt. Co.       |
| <b>Plumbago—</b>            |       |                          |
| Ceylon, 324 cks.            |       | R. G. Hall & Co.         |
| " 659                       |       | J. Thredder, Son, & Co.  |
| Germany, 79                 |       | O. Scholz                |
| " 170                       |       | E. & T. Pink             |
| " 71                        |       | J. Thredder, Son, & Co.  |
| Ceylon, 333                 |       | Parry & Co.              |
| <b>Potassium Carbonate—</b> |       |                          |
| Germany, 100 c.             |       | Petri Es.                |
| <b>Potassium Chlorate—</b>  |       |                          |
| Holland, 16 cks.            |       | J. Owen                  |
| <b>Potassium Sulphate—</b>  |       |                          |
| E. Indies, 212 bgs.         |       | G. H. Wilson & Son       |
| <b>Pumice Stone—</b>        |       |                          |
| Holland, 18 c.              |       | Hernu, Peron, & Co.      |
| <b>Rosin—</b>               |       |                          |
| U. States, 1,000 brls.      |       | J. Knight & Son          |
| <b>Saltpetre—</b>           |       |                          |
| E. Indies, 570 bgs.         |       | Perkins & Hunter         |
| " 607                       |       | Blackwood, Bryson, & Co. |
| " 5,017                     |       | Lucas & Spencer's Wf.    |
| Germany, 8 cks.             |       | P. Hecker & Co.          |
| " 70                        |       | T. Merry & Son           |
| " 4                         |       | J. Hall & Son            |
| <b>Soda—</b>                |       |                          |
| Germany, 2,000 c.           |       | R. Waters                |
| <b>Sodium Hyposulphite—</b> |       |                          |
| Holland, 100 cks.           |       | R. W. Greeff & Co.       |
| <b>Starch—</b>              |       |                          |
| Belgium, 146 cs.            |       | F. Claydon & Co.         |
| " 330                       |       | E. & T. Pink             |
| Germany, 50                 |       | Phillipps & Graves       |
| Holland, 20                 |       |                          |
| " 10                        |       | T. H. Lee                |
| " 50                        |       | Hernu, Peron, & Co.      |
| Belgium, 305                |       | T. H. Lee                |
| Germany, 200                |       | L. Sutro & Co.           |
| Belgium, 60                 |       | S. Ives                  |
| <b>Stearine—</b>            |       |                          |
| France, 150 bgs.            |       | G. Booy & Co.            |
| Holland, 13                 |       | J. Owen                  |
| France, 50                  |       | Beck & Pollitzer         |
| Belgium, 50 cs.             |       | Poth, Hille, & Co.       |
| <b>Sulphur—</b>             |       |                          |
| Italy, 5 t.                 |       | J. Kitchin, Ltd.         |
| " 113                       |       | W. C. Bacon & Co.        |
| <b>Tartaric Acid—</b>       |       |                          |
| France, 15 pks.             |       | B. & F. Wf. Co.          |
| Holland, 6                  |       | F. C. Devon & Co.        |
| <b>Ultramarine—</b>         |       |                          |
| Holland, 40 cks.            |       | Hernu, Peron, & Co.      |
| " 1 cs.                     |       | G. Rahn & Co.            |
| " 3                         |       | W. Harrison & Co.        |
| Germany, 18 pks.            |       | J. Barber & Co.          |
| " 24 cks.                   |       | T. Hamilton              |
| <b>Varnish—</b>             |       |                          |
| Germany, 19 pks.            |       | T. H. Lee                |
| France, 25                  |       | Suter, Harman, & Co.     |
| U. States, 24               |       | Taylor Bros.             |



**Gris—**  
1 ck. B. & F. W. Co.  
**Lead—**  
20 cks. J. L. Lyon & Co.  
17 brls. W. H. Carey & Sons  
10 cks. Phillips & Graves  
**Pulp—**  
498 pks. Tough & Henderson  
300 W. E. Bott & Co.  
250 Johnsen & Jorgensen  
55 J. Owen  
320 Daily Telegraph Co.  
1,166 F. Claydon & Co.  
244 W. G. Taylor & Co.  
100 H. C. Everett  
260 G. Rahn & Co.  
120 Hernu, Peron, & Co.  
320 W. G. Taylor & Co.  
80 bls. H. Rabey & Mather  
**Chloride—**  
8 pks. Hernu, Peron, & Co.  
**Oxide—**  
3 cks. J. Barber & Co.  
50 J. Matton  
50 pks. Prprs. Dowgate  
100 brls. M. Ashby, Ltd.  
**Sulphate—**  
6 cks. Stobbs, Wilson, & Co.  
17 F. Smith

# LIVERPOOL.

Week ending April 16th.

**nen—**  
3 cs.  
**ony—**  
914 bgs.  
**es—**  
18 cks.  
23  
**Meal—**  
2,000 bgs.  
**ite—**  
1,000 t. Roberts & Evans  
**e of Lime—**  
136 bgs. Avelino  
2,600 Aramayoolo  
**choue—**  
26 cks. 69 cs.  
**icals (otherwise undescribed)**  
10 cks.  
**ne Ore—**  
1,030 bgs. A. Gibbs, Sons & Co.  
**rs—**  
18 cks. Allan Brs.  
35  
**nsed Oil—**  
10 brls. M. Bell  
250  
2,418  
**Blood—**  
21 bgs.  
**uffs—**  
3 583 bxs.  
60 cs.  
665  
3 bgs.  
1,480 ps. D. Ackerley & Son  
9 t. F. Levy Sucars  
467 blocks  
8,917 ps. W. H. Thompson & Co.  
1,894 sticks Ledward, Bibby & Co.  
**mbler**  
352 bgs. R. & J. Henderson  
362 5,524 bls.  
112 t. P. Leckie & Co.  
**hella**  
593 bls.  
**amac**  
840 bgs.

**Farina—**  
Fiume, 100 bgs. C. T. Vander Veen  
100 A. Boumann & Co.  
25  
**Gelatine—**  
Paris, 4 bls.  
Rouen, 5 cks.  
**Glucose—**  
New York, 200 brls. T. M. Duche & Son  
Dunkirk, 100 bgs.  
Hamburg, 24 cks.  
New York, 200  
Boston, 300  
Baltimore, 50  
**Glue—**  
Rouen, 20 cs. Manchester Ship Canal Co.  
40 cks. Co-op.  
W'sale Society, Ltd.  
St. Nazaire, 8 10 brls. D. Moseley & Sons  
Rotterdam, 3 cs. 15 2 bls. 200 bgs  
Fiume, 23 brls. 20  
17 40 bgs. T. M. Duche & Son  
**Lithopone—**  
Rotterdam, 6 cks.  
**Manganese—**  
Hamburg, 2 kgs.  
**Manganese Ore—**  
Coquimbo, 1,860 t.  
**Nitrate—**  
Caleta Buena, 588 cks.  
**Ochre—**  
Marseilles, 10 brls.  
**Paint—**  
Beyrout, 2 brls. W. R. Taylor & Co.  
Brunswick, 200 cs.  
Boston, 20  
Alexandria, 2 kgs.  
**Paraffin Scale—**  
New York, 217 brls. Thompson & Bedford  
**Phosphate Rock—**  
Fernandina, 1,794 t.  
Brunswick, 1,794  
**Potash—**  
Dunkirk, 22 dms 5 brls. J. Mathews & Co.  
43 9 cks.  
**Potassium Carbonate—**  
Stettin, 60 cks. Sachse & Klemm  
**Pumice Stone—**  
Messina, 10 cs.  
**Pyrites—**  
Huelva, 1,968 t. Mathieson & Co.  
**Rosin—**  
Brunswick, Ga., 3,328 brls.  
Boston, 1,000  
New York, 3,950  
**Salt—**  
Hamburg, 500 sks.  
**Saltpetre—**  
Karachi, 280 bgs.  
Hamburg, 4 cks. 20 kgs.  
**Salts of Potash—**  
Hamburg, 102 bgs.  
**Soap—**  
Marseilles, 12 cs.  
Malta, 1  
Bari, 72 200 brls.  
Constantinople, 1 bg.  
Bordeaux, 10  
St. John, N.B., 100  
New York, 1 Burrough Wellcome  
694 pks.  
**Sodium Nitrate—**  
Caleta Buena, 20,655 bgs. G. C. Dobell & Co.  
Cox Brs.  
Junin, Chili, 13,642  
Iquique, 697  
**Starch—**  
Rotterdam, 68 cs. J. T. Fletcher & Co.  
Antwerp, 44  
54  
Hamburg, 120  
New York, 10 brls. J. Armstrong & Co.  
**Stearine—**  
Antwerp, 136 bgs.  
**Superphosphate—**  
Terneuzen, 330 t. T. Vickers & Sons

**Tale—**  
Trieste, 10 bgs. F. Porise  
**Tallow—**  
New York, 200 hds.  
Campana, 640 cks.  
Portland, 65 tcs. Swift & Co.  
**Tartar—**  
Hamburg, 5 cks.  
Bordeaux, 11  
**Tartaric Acid—**  
Bari, 32 cks.  
**Yarnish—**  
New York, 21 brls. R. E. Warren  
**Waste Salt—**  
Hamburg, 1,524 bgs. & a qty.  
**White Lead—**  
Rotterdam, 48 cks.  
**Wood Pulp—**  
Rotterdam, 148 bls.  
**Zinc Oxide—**  
Rotterdam, 25 cks. J. Mathews & Co.  
Antwerp, 125 brls.  
**Zinc white—**  
Rotterdam, 35 cks.

# MANCHESTER.

Week ending April 18th.

**Acetate of Lime—**  
New York, 1,696 bgs.  
**Alumina Sulphate—**  
Rotterdam, 23 cks.  
**Aniline Colours—**  
Rotterdam, 5 cks.  
**Barytes—**  
Rotterdam, 50 bgs.  
**Chromium Chloride—**  
Rotterdam, 4 brls.  
**Colours—**  
Rotterdam, 24 cks. 6 cs. 61 brls.  
Hamburg, 8 bxs.  
Ghent, 1 15  
5  
**Dyestuffs—**  
Allzarine  
Rotterdam, 20 cks.  
Logwood  
Laguna, 345 t.  
Luca, 247  
Montego Bay, 202  
Madder  
Rotterdam, 1 ck.  
**Glucose—**  
New York, 650 brls.  
**Glue—**  
Rotterdam, 3 cks. 1 cs. 20 bgs.  
20 bskts.  
Hamburg, 10  
Alexandria, 1 bx.  
**Limestone—**  
Antwerp, 2 cs.  
**Pitch—**  
Hamburg, 5 cks.  
**Potash—**  
Antwerp, 20 dms.  
**Potassium Permanganate—**  
Hamburg, 2 cks.  
**Potassium Sulphate—**  
Rotterdam, 43 cks.  
**Pyrites—**  
Huelva, 1,383 t.  
**Saltpetre—**  
Hamburg, 9 cks.  
**Sodium Nitrate—**  
Rotterdam, 4 cks.  
**Starch—**  
Rotterdam, 120 cs.  
Antwerp, 56  
New York, 2,400 bgs. T. M. Duche & Sons  
**Tartaric Acid—**  
Rotterdam, 2 cks.  
**Tin Perchloride—**  
Antwerp, 10 cks.  
**Waste Salt—**  
Hamburg, qty.  
**Wood Pulp—**  
Rotterdam, 51 bls.  
New York, 228 rolls.  
**Zinc Oxide—**  
Antwerp, 20 brls. 14 cs.  
New York, 100

# HULL.

Week ending April 18th.

**Acids—**  
Rotterdam, 1 ck. W. & C. L. Ringrose  
**Barytes—**  
Antwerp, 34 cks. Todd & Son  
142 H. F. Pudsey  
Rotterdam, 45 Hutchinson & Son  
**Camphor—**  
New York, 10 cks. Wilson, Sons, & Co., Ltd.  
**Castor Oil—**  
Antwerp, 30 brls.  
**Chemicals (otherwise undescribed)**  
Antwerp, 40 dms. Wilson, Sons, & Co., Ltd.  
Danzig, 14 pks. W. & C. L. Ringrose  
Rotterdam, 7 cks. Wilson, Sons, & Co., Ltd.  
New York, 1 dm  
**Cod Oil—**  
Christiania, 6 brls. Wilson, Sons, & Co., Ltd.  
Drontheim, 37  
Christiansund, 24  
Bergen, 269  
**Colours—**  
Rotterdam, 41 pks. W. & C. L. Ringrose  
4 brls.  
Ghent, 16 cks.  
Stettin, 8  
Rotterdam, 5 Hutchinson & Son  
Bremen, 2 Veltmann & Co.  
Dunkirk, 10  
Danzig, 4 Wilson, Sons, & Co., Ltd.  
**Cottonseed Oil—**  
New York, 350 brls. Wilson, Sons, & Co., Ltd.  
**Dextrine—**  
Harlingen, 50 bls. Hutchinson & Son  
Stettin, 100 cks. Wilson, Sons, & Co., Ltd.  
**Dyestuffs—**  
Allzarine  
Rotterdam, 55 pks. W. & C. L. Ringrose  
3 cks.  
**Argols**  
Bordeaux, 78 cks. Wilson, Sons, & Co., Ltd.  
**Shumac**  
Trieste, 106 bls. Wilson, Sons, & Co., Ltd.  
**Valonia**  
Marathonisi, 249 t.  
**Farina—**  
Ghent, 21 bgs. Wilson, Sons, & Co., Ltd.  
76 cs.  
Stettin, 350 bgs.  
**Glucose—**  
New York, 1,500 bgs. 200 brls.  
Amsterdam, 50 Hutchinson & Son  
**Glue—**  
Dunkirk, 50 cks. 40 pks. Wilson, Sons, & Co., Ltd.  
Hamburg, 8 cs.  
Rouen, 17 cks. 66 bls. Rawson & Robinson  
Danzig, 10 bskts. Wilson, Sons, & Co., Ltd.  
Antwerp, 19 pks. Bailey & Leatham  
**Lime—**  
New York, 1,578 bgs. Wilson, Sons, & Co., Ltd.  
**Ochre—**  
Rouen, 30 cks.  
**Plumbago—**  
Hamburg, 19 cks. Wilson, Sons, & Co., Ltd.  
**Potash—**  
Rotterdam, 20 cks. Hutchinson & Son  
**Potassium Chloride—**  
Stockholm, 20 kgs. H. Briggs, Sons, & Co.  
**Pumice Stone—**  
Trieste, 1 kg. Wilson, Sons, & Co., Ltd.  
**Quicksilver—**  
Hamburg, 2 bls. Wilson, Sons, & Co., Ltd.



|                         |             |                           |  |
|-------------------------|-------------|---------------------------|--|
| <b>Rosin</b> —          |             |                           |  |
| Bordeaux,               | 8 cks.      | Rawson & Robinson         |  |
| <b>Soap</b> —           |             |                           |  |
| Trieste,                | 1 cs.       | Wilson, Sons, & Co., Ltd. |  |
| <b>Sodium Nitrate</b> — |             |                           |  |
| Iquique,                | 14,990 bgs. | Nichs. Waterhouse, & Sons |  |
| <b>Starch</b> —         |             |                           |  |
| Amsterdam,              | 60 cs.      | W. & C. L. Ringrose       |  |
| Antwerp,                | 80          | Bailey & Leetham          |  |
| Amsterdam,              | 308         | Hutchinson & Son          |  |
| <b>Stearine</b> —       |             |                           |  |
| Antwerp,                | 50 bgs.     | Wilson, Sons, & Co., Ltd. |  |
| <b>Tallow</b> —         |             |                           |  |
| Copenhagen,             | 4 cks.      | Johnson Bros.             |  |
| Stockholm,              | 8           |                           |  |
| <b>Tartaric Acid</b> —  |             |                           |  |
| Rotterdam,              | 2 cks.      | Hutchinson & Son          |  |
| <b>Treacle</b> —        |             |                           |  |
| New York,               | 1,370 brls. | Wilson, Sons, & Co., Ltd. |  |
| <b>Yarnish</b> —        |             |                           |  |
| New York,               | 17 brls.    | Wilson, Sons, & Co., Ltd. |  |
|                         | 5           | R. Johnston & Co.         |  |
| <b>Waste Salt</b> —     |             |                           |  |
| Hamburg,                | 887 bgs.    |                           |  |
| <b>Wood Pulp</b> —      |             |                           |  |
| Gothenburg,             | 410 pks.    | Wilson, Sons, & Co., Ltd. |  |
| Christiania,            | 737 bls.    |                           |  |
| Drontheim,              | 560         |                           |  |
| Bergen,                 | 205 pks.    |                           |  |
| Halmstad,               | 1 ble.      |                           |  |
| <b>Zinc Oxide</b> —     |             |                           |  |
| New York,               | 60 brls.    | Hutchinson & Son          |  |
| Rotterdam,              | 5 cks.      |                           |  |
| <b>Zinc White</b> —     |             |                           |  |
| Rotterdam,              | 15 cks.     | Hutchinson & Son          |  |

**GLASGOW.**

Week ending April 23rd.

|                          |                        |                  |  |
|--------------------------|------------------------|------------------|--|
| <b>Acetate of Lime</b> — |                        |                  |  |
| New York,                | 1,495 bgs.             |                  |  |
| <b>Albumen</b> —         |                        |                  |  |
| Ghent,                   | 10 cs.                 |                  |  |
| <b>Aniline</b> —         |                        |                  |  |
| Rotterdam,               | 4 cs. 21 brls. 10 bxs. | J. Rankine & Son |  |
| <b>Antimony Salt</b> —   |                        |                  |  |
| Rotterdam,               | 10 cks.                | J. Rankine & Son |  |
| <b>Arachide Oil</b> —    |                        |                  |  |
| Rotterdam,               | 4 cks.                 | J. Rankine & Son |  |
| <b>Barytes</b> —         |                        |                  |  |
| Rotterdam,               | 46 pks.                |                  |  |
| <b>Castor Oil</b> —      |                        |                  |  |
| Antwerp,                 | 59 cks.                |                  |  |

|                                          |                    |                    |  |
|------------------------------------------|--------------------|--------------------|--|
| <b>Chemicals (otherwise undescribed)</b> |                    |                    |  |
| Rotterdam,                               | 4 cs. 1 ck.        | J. Rankine & Son   |  |
| Lisbon,                                  |                    |                    |  |
| <b>Colours</b> —                         |                    |                    |  |
| Rotterdam,                               | 2 cks. 77 pks.     |                    |  |
| Hamburg,                                 |                    |                    |  |
| <b>Cottonseed Oil</b> —                  |                    |                    |  |
| Rotterdam,                               | 12 brls.           | J. Rankine & Son   |  |
| <b>Dyestuffs</b> —                       |                    |                    |  |
| <b>Alizarine</b>                         |                    |                    |  |
| Rotterdam,                               | 100 cks.           | J. Rankine & Son   |  |
|                                          | 48 pks.            |                    |  |
| <b>Cutch</b>                             |                    |                    |  |
| Rangoon,                                 | 2,450 bxs.         | P. Henderson & Co. |  |
| <b>Shumac</b>                            |                    |                    |  |
| Palermo,                                 | 450 bgs.           |                    |  |
| <b>Farina</b> —                          |                    |                    |  |
| Antwerp,                                 | 3 bgs.             |                    |  |
| <b>French Chalk</b> —                    |                    |                    |  |
| Leghorn,                                 | 5 cs.              |                    |  |
| <b>Glucose</b> —                         |                    |                    |  |
| New York,                                | 610 brls. 400 bgs. |                    |  |
| <b>Glue</b> —                            |                    |                    |  |
| Rouen,                                   | 21 cks.            |                    |  |
| Rotterdam,                               | 100 bgs.           |                    |  |
| Nantes,                                  | 20 bls.            |                    |  |
| <b>Lithopone</b> —                       |                    |                    |  |
| Rotterdam,                               | 4 cks.             | J. Rankine & Son   |  |
| <b>Ochre</b> —                           |                    |                    |  |
| New York,                                | 237 brls.          |                    |  |
| <b>Paraffin Wax</b> —                    |                    |                    |  |
| Rangoon,                                 | 640 bxs.           | P. Henderson & Co. |  |
| New York,                                | 603 brls.          |                    |  |
| <b>Plumbago</b> —                        |                    |                    |  |
| Genoa,                                   | 250 bgs.           |                    |  |
| <b>Potash</b> —                          |                    |                    |  |
| Rotterdam,                               | 22 cks.            | J. Rankine & Son   |  |
| <b>Pyrates</b> —                         |                    |                    |  |
| Huelva,                                  | 3,566 t.           | Tharais Co.        |  |
| <b>Rosin</b> —                           |                    |                    |  |
| New York,                                | 250 brls.          |                    |  |
| <b>Starch</b> —                          |                    |                    |  |
| New York,                                | 500 sks.           |                    |  |
| Rotterdam,                               | 20 crts.           | J. Rankine & Son   |  |
| Boston,                                  | 400                |                    |  |
| <b>Stearine</b> —                        |                    |                    |  |
| Rotterdam,                               | 15 cks.            | J. Rankine & Son   |  |
| <b>Tallow</b> —                          |                    |                    |  |
| Boston,                                  | 130 tcs.           |                    |  |
| <b>Tartar</b> —                          |                    |                    |  |
| Bordeaux,                                | 12 cks.            |                    |  |
| Hamburg,                                 | 4                  |                    |  |
| <b>Tartaric Acid</b> —                   |                    |                    |  |
| Messina,                                 | 30 cks.            |                    |  |
| <b>Treacle</b> —                         |                    |                    |  |
| New York,                                | 50 brls.           |                    |  |
| <b>Yarnish</b> —                         |                    |                    |  |
| New York,                                | 37 brls. 1 cs.     |                    |  |
| Antwerp,                                 | 5 cks. 3           |                    |  |

|                     |          |                  |  |
|---------------------|----------|------------------|--|
| <b>Waste Salt</b> — |          |                  |  |
| Hamburg,            | 50 bgs.  |                  |  |
| <b>White Lead</b> — |          |                  |  |
| Rotterdam,          | 40 cks.  | J. Rankine & Son |  |
| <b>Wood Pulp</b> —  |          |                  |  |
| Christiania,        | 494 bls. |                  |  |
| Christiansand,      | 2,014    |                  |  |
| Skien,              | 50       |                  |  |
| <b>Zinc Oxide</b> — |          |                  |  |
| Antwerp,            | 15 cks.  |                  |  |

**TYNE.**

Week ending April 18th.

|                              |               |                             |  |
|------------------------------|---------------|-----------------------------|--|
| <b>Barium Chlorate</b> —     |               |                             |  |
| Rotterdam,                   | 350 bgs.      | Tyne S. S. Co.              |  |
| <b>Cod Oil</b> —             |               |                             |  |
| Trondhjem,                   | 7 brls.       |                             |  |
| <b>Colours</b> —             |               |                             |  |
| Hamburg,                     | 4 cs. 1 ck.   | Tyne S. S. Co.              |  |
| Rotterdam,                   | 1 bx.         | "                           |  |
| <b>Glucose</b> —             |               |                             |  |
| New York,                    | 400 brls.     | Furness, Withy, & Co.       |  |
| <b>Glue</b> —                |               |                             |  |
| Antwerp,                     | 2 cks.        | Tyne S. S. Co.              |  |
| <b>Lead Nitrate</b> —        |               |                             |  |
| Rotterdam,                   | 6 cks.        | Tyne S. S. Co.              |  |
| <b>Minium</b> —              |               |                             |  |
| Rotterdam,                   | 16 cks.       | Tyne S. S. Co.              |  |
| <b>Paint</b> —               |               |                             |  |
| Hamburg,                     | 1 ck. 1 dm.   | Tyne S. S. Co.              |  |
| <b>Phosphate Rock</b> —      |               |                             |  |
| Bona,                        | 2,200 t.      | Langdale's Chem. Manure Co. |  |
| <b>Potash</b> —              |               |                             |  |
| Hamburg,                     | 8 cks.        | Tyne S. S. Co.              |  |
| <b>Rosin</b> —               |               |                             |  |
| New York,                    | 400 brls.     | Furness, Withy, & Co.       |  |
| Wilmington,                  | 710 t. 17 c.  |                             |  |
| <b>Sodium Hyposulphite</b> — |               |                             |  |
| Rotterdam,                   | 2 btl.        | Tyne S. S. Co.              |  |
| <b>Starch</b> —              |               |                             |  |
| Antwerp,                     | 138 cs.       | Tyne S. S. Co.              |  |
| <b>Stearine</b> —            |               |                             |  |
| New York,                    | 58 brls.      | Furness, Withy, & Co.       |  |
| <b>Yarnish</b> —             |               |                             |  |
| Antwerp,                     | 3 cs. 2 brls. | Tyne S. S. Co.              |  |
| <b>White Lead</b> —          |               |                             |  |
| Antwerp,                     | 28 cks.       | Tyne S. S. Co.              |  |
| <b>Wood Pulp</b> —           |               |                             |  |
| Christiania,                 | 292 bls.      |                             |  |
| Gothenburg,                  | 120           |                             |  |
| <b>Zinc Sulphate</b> —       |               |                             |  |
| Gothenburg,                  | 30 cs.        |                             |  |

**GOOLE.**

Week ending April 15th.

|                                          |            |     |  |
|------------------------------------------|------------|-----|--|
| <b>Albumen</b> —                         |            |     |  |
| Boulogne,                                | 2 cs.      |     |  |
| <b>Carbolic Acid</b> —                   |            |     |  |
| Natal,                                   | 1 cs.      | £17 |  |
| Nagasaki,                                | 1 t. 7 c.  | 98  |  |
| Hiogo,                                   | 5 t. 10    | 332 |  |
| Paris,                                   | 12 cks.    | 24  |  |
| Rotterdam,                               | 87         | 463 |  |
| Halifax,                                 | 41 pks.    | 23  |  |
| <b>Carbon Bisulphide</b> —               |            |     |  |
| Sydney,                                  | 100 dms.   | £42 |  |
| <b>Caustic Soda</b> —                    |            |     |  |
| Mahé,                                    | 1 t. 16 c. | £16 |  |
| Zanzibar,                                | 2 t. 10    | 22  |  |
| E. London,                               | 13         | 14  |  |
| Philadelphia,                            | 14 t. 10   | 140 |  |
| Natal,                                   | 1 t. 10    | 38  |  |
| Singapore,                               | 10         | 5   |  |
| Algoa Bay,                               | 1 t. 3     | 25  |  |
| Wellington,                              | 13         | 33  |  |
| Melbourne,                               | 1 t. 11    | 40  |  |
| <b>Chemicals (otherwise undescribed)</b> |            |     |  |
| Auckland,                                | 2 cs.      | £11 |  |

|                                          |                 |         |  |
|------------------------------------------|-----------------|---------|--|
| <b>Alizarine</b> —                       |                 |         |  |
| Rotterdam,                               | 75 cks.         |         |  |
| <b>Antimony</b> —                        |                 |         |  |
| Boulogne,                                | 3 cks.          |         |  |
| <b>Barytes</b> —                         |                 |         |  |
| Rotterdam,                               | 10 cks.         |         |  |
| <b>Chemicals (otherwise undescribed)</b> |                 |         |  |
| Hamburg,                                 | 1 ck.           |         |  |
| <b>Colours</b> —                         |                 |         |  |
| Ghent,                                   | 1 cs. 9 kg      |         |  |
| Hamburg,                                 | 293 cks. 7      |         |  |
| Amsterdam,                               | 2               |         |  |
| <b>Dyestuffs (otherwise undescribed)</b> |                 |         |  |
| Boulogne,                                | 48 cks. 3 cs.   |         |  |
| Rotterdam,                               | 165             | 3 t.    |  |
| <b>Farina</b> —                          |                 |         |  |
| Hamburg,                                 | 870 bgs.        |         |  |
| Delfsdyhl,                               | 220             |         |  |
| Harlingen,                               | 100             |         |  |
| <b>Glue</b> —                            |                 |         |  |
| Boulogne,                                | 10 cks.         |         |  |
| <b>Logwood</b> —                         |                 |         |  |
| Hayti,                                   | 425 t.          |         |  |
| Jamaica,                                 | 460             |         |  |
| <b>Phosphate</b> —                       |                 |         |  |
| Ghent,                                   | 7,500 bgs.      |         |  |
| <b>Potash</b> —                          |                 |         |  |
| Rotterdam,                               | 16 cks.         |         |  |
| Hamburg,                                 | 20 dms.         |         |  |
| <b>Saltpetre</b> —                       |                 |         |  |
| Rotterdam,                               | 100 bgs.        |         |  |
| Hamburg,                                 | 85              | 11 cks. |  |
| <b>Starch</b> —                          |                 |         |  |
| Ghent,                                   | 124 cs.         |         |  |
| <b>Sulphur Ore</b> —                     |                 |         |  |
| Seville,                                 | 1,060 t.        |         |  |
| <b>Waste Salt</b> —                      |                 |         |  |
| Hamburg,                                 | 420 t. 150 cks. |         |  |

**GRIMSBY.**

Week ending April 18th.

|                                          |               |              |      |
|------------------------------------------|---------------|--------------|------|
| <b>Albumen</b> —                         |               |              |      |
| Hamburg,                                 | 2 cks.        |              |      |
| <b>Caoutchouc</b> —                      |               |              |      |
| Hamburg,                                 | 13 cs.        |              |      |
| Rotterdam,                               | 1             |              |      |
| Antwerp,                                 | 2             |              |      |
| <b>Chemicals (otherwise undescribed)</b> |               |              |      |
| Hamburg,                                 | 15 cks. 1 cs. |              |      |
| Antwerp,                                 | 1             |              |      |
| <b>Colours</b> —                         |               |              |      |
| Antwerp,                                 | 6 cks. 5 cs.  |              |      |
| Hamburg,                                 | 4             | 55           | 7 t. |
| <b>Dyes</b> —                            |               |              |      |
| Hamburg,                                 | 5 cks.        |              |      |
| Antwerp,                                 | 18            | 78 cs. 11 pk |      |
| <b>Farina</b> —                          |               |              |      |
| Hamburg,                                 | 90 bgs.       |              |      |
| <b>Wood Pulp</b> —                       |               |              |      |
| Malmo,                                   | 48 bls.       |              |      |
| Hamburg,                                 | 420           |              |      |
| Skien,                                   | 3,424         |              |      |
| <b>Zinc Ashes</b> —                      |               |              |      |
| Antwerp,                                 | 9 cks. 7 cs.  |              |      |

**EXPORTS OF CHEMICAL PRODUCTS**

OF

**THE PRINCIPAL PORTS OF THE UNITED KINGDOM.****LONDON.**

Week ending April 22nd.

|                             |             |       |  |
|-----------------------------|-------------|-------|--|
| <b>Acids</b> —              |             |       |  |
| Natal,                      | 3 t.        | £37   |  |
| <b>Alkali</b> —             |             |       |  |
| Melbourne,                  | 3 t. 4 c.   | £40   |  |
| Sydney,                     | 1 t. 10     | 20    |  |
| Bombay,                     | 3           | 20    |  |
| <b>Ammonium Carbonate</b> — |             |       |  |
| Bombay,                     | 5 cs.       | £10   |  |
| Paris,                      | 8 cks. 1 t. | 79    |  |
| New York,                   | 16          | 480   |  |
| <b>Ammonium Chloride</b> —  |             |       |  |
| Ghent,                      | 3 cks.      | £24   |  |
| Bushire,                    | 6 brls.     | 37    |  |
| Cologne,                    | 75          | 160   |  |
| Rotterdam,                  | 16          | 113   |  |
| <b>Ammonium Sulphate</b> —  |             |       |  |
| Ostend,                     | 10 t.       | £85   |  |
| Burgh,                      | 123         | 1,014 |  |

|                               |           |       |       |
|-------------------------------|-----------|-------|-------|
| Ghent,                        | 50        | 425   |       |
| Natal,                        | 12        | 8 c.  | 98    |
| Barbadoes,                    | 350       | 2,910 |       |
| Dunkirk,                      | 131       | 10    | 1,045 |
| Hamburg,                      | 28        | 165   |       |
| <b>Amorphous Phosphorus</b> — |           |       |       |
| Santos,                       | 5 c.      | £72   |       |
| <b>Anhydrous Ammonia</b> —    |           |       |       |
| Cologne,                      | 6 t. 4 c. | £508  |       |
| <b>Barium Chlorate</b> —      |           |       |       |
| New York,                     | 5 kgs.    | £23   |       |
| <b>Barium Nitrate</b> —       |           |       |       |
| New York,                     | 24 pks.   | £16   |       |
| <b>Borax</b> —                |           |       |       |
| Malmo,                        | 1 cs.     | £19   |       |
| Cadiz,                        | 1 t. 1 c. | 20    |       |
| Melbourne,                    | 10 kgs.   | 11    |       |
| E. London,                    | 2         | 5     | 42    |
| <b>Calcium Phosphate</b> —    |           |       |       |
| Amsterdam,                    | 4 cs.     | £47   |       |

|                                          |            |     |  |
|------------------------------------------|------------|-----|--|
| <b>Carbolic Acid</b> —                   |            |     |  |
| Natal,                                   | 1 cs.      | £17 |  |
| Nagasaki,                                | 1 t. 7 c.  | 98  |  |
| Hiogo,                                   | 5 t. 10    | 332 |  |
| Paris,                                   | 12 cks.    | 24  |  |
| Rotterdam,                               | 87         | 463 |  |
| Halifax,                                 | 41 pks.    | 23  |  |
| <b>Carbon Bisulphide</b> —               |            |     |  |
| Sydney,                                  | 100 dms.   | £42 |  |
| <b>Caustic Soda</b> —                    |            |     |  |
| Mahé,                                    | 1 t. 16 c. | £16 |  |
| Zanzibar,                                | 2 t. 10    | 22  |  |
| E. London,                               | 13         | 14  |  |
| Philadelphia,                            | 14 t. 10   | 140 |  |
| Natal,                                   | 1 t. 10    | 38  |  |
| Singapore,                               | 10         | 5   |  |
| Algoa Bay,                               | 1 t. 3     | 25  |  |
| Wellington,                              | 13         | 33  |  |
| Melbourne,                               | 1 t. 11    | 40  |  |
| <b>Chemicals (otherwise undescribed)</b> |            |     |  |
| Auckland,                                | 2 cs.      | £11 |  |

|                        |          |         |  |
|------------------------|----------|---------|--|
| E. London,             | 20 kgs.  | 20 cks. |  |
| Fremantle,             | 16       |         |  |
| Apia,                  | 3        |         |  |
| Copenhagen,            | 3        |         |  |
| Cape Town,             | 4        |         |  |
| Boulogne,              | 16       |         |  |
| Oporto,                | 16 t. 10 |         |  |
| Dunkirk,               | 16 t. 10 |         |  |
| Algoa Bay,             | 10       |         |  |
| <b>Citric Acid</b> —   |          |         |  |
| Rotterdam,             | 1 kg.    |         |  |
| Algoa Bay,             | 2        |         |  |
| Hamburg,               | 5        | 13 c.   |  |
| Amsterdam,             | 2 cks.   |         |  |
| Adelaide,              | 1 t. 5   |         |  |
| Lisbon,                | 1 t. 5   |         |  |
| Halifax,               | 5        |         |  |
| <b>Coal Products</b> — |          |         |  |
| <b>Alizarine</b>       |          |         |  |
| New York,              | 25 cks.  |         |  |
| Bordeaux,              | 10       |         |  |



|                            |                       |        |
|----------------------------|-----------------------|--------|
| line Oil                   | 20 drs.               | £710   |
| ork,                       | 12 cks.               | 449    |
| bracene                    | 148 cks.              | £750   |
| dam,                       | 35 cks. 27 drs.       | £648   |
| sol                        | 49                    | 228    |
| dam,                       | 170                   | 647    |
| note                       | 3,523 brls.           | £1,585 |
| ork,                       | 1,000                 | 438    |
| note Oil                   | ancisco, 3 710 cks.   | £2,062 |
| ththa                      | 10 cks.               | £11    |
| y,                         | 30 27 brls.           | 160    |
| ththaline                  | 50 bgs.               | £30    |
| aux,                       | 80                    | 76     |
| illem,                     | 10                    | 9      |
| dam,                       | 688                   | 125    |
| urg,                       | 115 88 cks.           | 187    |
| port,                      | 29 cs 263             | 357    |
| ork,                       | 3 pks.                | £12    |
| ae,                        | orne, 20 brls.        | 15     |
| rk,                        | 100 t.                | 168    |
| ore,                       | 1,190                 | 1,952  |
| ork,                       | 269 bgs.              | 60     |
| eld,                       | 30 cks. 200 brls. 212 | 265    |
| 6 cs.                      | 145                   | 20     |
| rp,                        | 7,288 35 kgs.         | 2,395  |
| Oil                        | 500 brls.             | £283   |
| ork,                       | 50 cks.               | £227   |
| asa,                       | 70 brls.              | 57     |
| sol                        | 50 cks.               | £217   |
| rdam,                      | 7 pks.                | £12    |
| roducts (otherwise undes.) | 10 t.                 | £200   |
| r Sulphate                 | 7 c.                  | £17    |
| as                         | 6 c.                  | £12    |
| of Tartar                  | 2 cs.                 | 10     |
| nile,                      | 4                     | 20     |
| y,                         | 15                    | 81     |
| ind,                       | 5                     | 23     |
| gton,                      | 10                    | 41     |
| de,                        | 40 drs. 3 c           | £51    |
| ectants                    | 2 t. 2                | 14 cs. |
| ca,                        | 2                     | 16     |
| own,                       | 1 3                   | 14     |
| chee,                      | 11 pks.               | 21     |
| bo,                        | 60 cks.               | 19     |
| ntle,                      | 10                    | 27     |
| n,                         | 25                    | 125    |
| f,                         | 4 t. 18 c             | £20    |
| urghate                    | 1 t 14 c              | £25    |
| e                          | 10                    | 106    |
| ff,                        | 15                    | 126    |
| bo,                        | q8 9                  | 192    |
| t,                         | 29 18                 | 300    |
| dam,                       | 30 10                 | 107    |
| ica,                       | 10                    | 40     |
| s,                         | 1 19                  | 15     |
| berg,                      | 24 19                 | 385    |
| ey,                        | 1                     | 10     |
| de,                        | 1 4                   | 25     |
| Acid                       | 8; carboys            | £141   |
| Acid                       | 10 c                  | £16    |
| ama                        | 4 cs.                 | £51    |
| orus                       | 12                    | 132    |
| gton,                      | 6 pks.                | £12    |
| orne,                      | 1 cs.                 | 18     |
| idria,                     | 10 kgs                | £16    |
| ne,                        | 10 c.                 | £21    |
| y,                         | 20 cs.                | £270   |
| ium Bicarbonate            | 4 t. 2 c              | 421    |
| ium Chlorate               | 2, 14                 | 282    |
| um Cyanide                 | 80 cs.                | 500    |
| ake                        | 33 t.                 | £69    |
| re                         | 9 c.                  | £11    |
| Bay,                       | 1 t.                  | 21     |
| de,                        | 7                     | 159    |

|                       |                   |      |
|-----------------------|-------------------|------|
| Melbourne,            | 5 10              | 132  |
| Sheep Dip—            |                   |      |
| Jamaica,              | 9 c.              | £16  |
| Algoa Bay, 1,000 pks. |                   | 105  |
| R. Ayres,             |                   | 23   |
| Natal,                | 1,177 5 t. 16     | 577  |
| E. London,            | 301               | 253  |
| Silver Nitrate—       |                   |      |
| Bombay,               | 1 cs.             | £44  |
| Soda—                 |                   |      |
| Cape Town,            | 4 t. 3 c.         | £10  |
| Soda Alkali—          |                   |      |
| Kotterdam,            | 5 t.              | £30  |
| Cape Town,            | 2 4 c.            | 6    |
| Soda Crystals—        |                   |      |
| Fremantle,            | 8 t. 12 c.        | £21  |
| Sodium Bicarbonate—   |                   |      |
| Wellington,           | 5 c.              | £6   |
| Sodium Carbonate—     |                   |      |
| Melbourne,            | 7 c.              | £12  |
| Sodium Hyposulphite—  |                   |      |
| Boston,               | 11 t.             | £57  |
| Sodium Prussiate—     |                   |      |
| New York,             | 2 cks.            | £28  |
| Strontium Carbonate—  |                   |      |
| New York,             | 10 kgs            | £17  |
| Strontium Nitrate—    |                   |      |
| New York,             | 15 brls. 20 kgs.  | £97  |
| Sulphur—              |                   |      |
| Cape Town,            | 225 kgs. 400 cks. | £451 |
| Natal,                | 5 t. 16 c.        | 42   |
| E. London,            | 80 kgs.           | 29   |
| Sulphuric Acid—       |                   |      |
| Cape Town,            | 1 t. 10 c.        | £12  |
| Natal,                | 11 17             | 95   |
| Tartaric Acid—        |                   |      |
| Fremantle,            | 5 c.              | £35  |
| Auckland,             | 5                 | 23   |
| Lisbon,               | 5                 | 30   |
| Sydney,               | 1 t. 10           | 190  |

# LIVERPOOL.

Week ending April 22nd.

|                             |            |      |
|-----------------------------|------------|------|
| Alum—                       |            |      |
| Tripoli,                    | 1 t. 10 c. | £7   |
| Oporto,                     | 1 1        | 5    |
| Rabat,                      | 2 9 2 q.   | 11   |
| Adelaide,                   | 1          | 5    |
| Brisbane,                   | 1 2 3      | 6    |
| Melbourne,                  | 6 10 1     | 36   |
| Sydney,                     | 10 5       | 47   |
| Montreal,                   | 10 4 4     | 49   |
| Lisbon,                     | 5 5 1      | 24   |
| Boston,                     | 18         | 90   |
| Portland, O,                | 20         | 100  |
| Aluminous Cake—             |            |      |
| Calcutta,                   | 5 t.       | £15  |
| Melbourne,                  | 6 6 c.     | 25   |
| Montreal,                   | 1 13       | 5    |
| Ammonium Carbonate—         |            |      |
| Santos,                     | 11 c.      | £37  |
| Marseilles,                 | 9 2 q.     | 17   |
| Ammonium Chloride—          |            |      |
| Yokohama,                   | 10 c.      | £12  |
| Kurrachee,                  | 15         | 27   |
| Constantinople,             | 1 t.       | 37   |
| Trieste,                    | 2 19 1 q.  | 107  |
| Patras,                     | 3 1        | 6    |
| Marseilles,                 | 18 1       | 34   |
| Beyrout, 8 brls.            |            | 43   |
| Galata,                     | 15         | 27   |
| Alexandria,                 | 5 4 1      | 183  |
| Ammonium Sulphate—          |            |      |
| C'rthage (Spn), 19 t. 10 c. |            | £167 |
| Samarang,                   | 25         | 225  |
| Sourabaya,                  | 50         | 470  |
| Valencia,                   | 75 10      | 615  |
| Philadelphia,               | 99 10      | 861  |
| Las Palmas,                 | 73 13 2 q. | 583  |
| Barbadoes,                  | 25 2 4     | 319  |
| Barcelona,                  | 45 10 2    | 326  |
| Cartagena,                  | 10 4 1     | 73   |
| Bleaching Powder—           |            |      |
| Baltimore,                  | 184 cks.   |      |
| Barcelona,                  | 9          |      |
| Boston,                     | 517        |      |
| Dunkirk,                    | 18         |      |
| Genoa,                      | 18         |      |
| Ghent,                      | 68         |      |
| Havana,                     | 40 brls.   |      |
| Maranham,                   | 6          |      |
| Montreal,                   | 18         |      |
| Nantes,                     | 44         |      |
| Naples,                     | 72         |      |
| Newport News,               | 102        |      |
| New York,                   | 318        |      |
| Norroping,                  | 135        |      |
| Oporto,                     | 12         |      |

|                                   |                 |      |
|-----------------------------------|-----------------|------|
| Rio de Janeiro,                   | 15 cs.          |      |
| Tampico,                          | 15              |      |
| Vera Cruz,                        | 14              |      |
| Boracic Acid—                     |                 |      |
| Danzig,                           | 3 t. 10 c. 1 q. | £105 |
| B. Ayres,                         | 1 2             | 34   |
| Yokohama,                         | 5 2             | 138  |
| Stettin,                          | 2 4 2           | 59   |
| Adelaide,                         | 7               | 12   |
| Antwerp,                          | 1               | 32   |
| Borax—                            |                 |      |
| Hamburg,                          | 2 t. 5 c. 2 q.  | £46  |
| Shanghai,                         | 1 3 3           | 24   |
| Para,                             | 6 2             | 7    |
| Yokohama,                         | 3 9             | 63   |
| Hiogo,                            | 3 9             | 63   |
| Stettin,                          | 1 3 2           | 25   |
| Gelle,                            | 2 4             | 41   |
| Norroping,                        | 1 1             | 20   |
| Havre,                            | 5 5             | 100  |
| Amsterdam,                        | 2 2 2           | 42   |
| Montreal,                         | 5 3             | 103  |
| Trieste,                          | 1               | 20   |
| Melbourne,                        | 3               | 63   |
| Sydney,                           | 10              | 10   |
| Kotterdam,                        | 24 9 9          | 296  |
| Antwerp,                          | 7 9             | 153  |
| Calcium—                          |                 |      |
| Alexandria,                       | 5 t.            | £12  |
| Malta,                            | 3 3 c.          | 7    |
| Odessa,                           | 10 8            | 24   |
| Calcium Chloride—                 |                 |      |
| Sydney,                           | 2 t. 2 c.       | £5   |
| Melbourne,                        | 19              | 26   |
| Carbolic Acid—                    |                 |      |
| New York,                         | 1 t.            | £90  |
| Alexandria, 2 brls                |                 | 13   |
| Yokohama,                         | 1 14 c. 3 q     | 105  |
| Kotterdam,                        | 11              | 520  |
| Calcutta, 6 dms.                  |                 | 8    |
| Rouen,                            | 2 7             | 224  |
| Hamburg,                          | 1 2             | 58   |
| Caustic Potash—                   |                 |      |
| Fairwater,                        | 4 c.            | £5   |
| Caustic Soda—                     |                 |      |
| Adelaide,                         | 35 dms.         |      |
| Amsterdam,                        | 119             |      |
| Bahia,                            | 25              |      |
| Baltimore,                        | 200             |      |
| Barcelona,                        | 50 cks.         |      |
| Brisbane,                         | 13 bxs.         |      |
| B. Ayres,                         | 220             |      |
| Ceara,                            | 20              |      |
| Cavite,                           | 25              |      |
| Constantinople,                   | 10              |      |
| Corfu,                            | 3               |      |
| Corinth,                          | 5               |      |
| Fairwater,                        | 50              |      |
| Fiume,                            | 125             |      |
| Genoa,                            | 366             |      |
| Hiogo,                            | 18              |      |
| Hong Kong,                        | 2               |      |
| La Guayra,                        | 32              |      |
| Leghorn,                          | 33              |      |
| Lisbon,                           | 61              |      |
| Malaga,                           | 15              |      |
| Marseilles,                       | 120             |      |
| Melbourne,                        | 243 30 pks. 30  |      |
| 5 cs.                             |                 |      |
| Messina,                          | 20              |      |
| M. Video,                         | 150             |      |
| Montreal,                         | 50              |      |
| Naples,                           | 94              |      |
| New York,                         | 360 50 crts.    |      |
| Odessa,                           | 371             |      |
| Oporto,                           | 90              |      |
| Palermo,                          | 5               |      |
| Paris,                            | 35              |      |
| Philadelphia,                     | 50              |      |
| Portland, O.,                     | 35              |      |
| Porto Alegre,                     | 30              |      |
| Quebec,                           | 25              |      |
| Rio de Janeiro,                   | 15              |      |
| Rotterdam,                        | 50              |      |
| St. John's, Nfld.,                | 6 pks.          |      |
| San Francisco,                    | 50              |      |
| Stettin,                          | 94              |      |
| Sydney,                           | 113             |      |
| Tampico,                          | 71              |      |
| Tarragona,                        | 25 brls.        |      |
| Trinidad,                         | 7               |      |
| Volo,                             | 25              |      |
| Chemicals (otherwise undescribed) |                 |      |
| Philadelphia,                     | 13 t. 14 c.     | £438 |
| Antwerp,                          | 21              |      |
| Rotterdam,                        | 5 1 9           |      |
| Samsoun,                          | 5 9             |      |
| Hamburg,                          | 14 25           |      |
| B. Ayres,                         | 1 10            | 55   |
| China Clay—                       |                 |      |
| Boston,                           | 439 t.          |      |
| B. Ayres,                         | 20              |      |
| Genoa,                            | 13 3 c.         |      |
| Lisbon,                           | 10              |      |

|                     |                  |       |
|---------------------|------------------|-------|
| Manila,             | 5 cks.           |       |
| New York,           | 120              |       |
| Philadelphia,       | 221              |       |
| Sydney,             | 10               |       |
| Chromium Trioxide—  |                  |       |
| Hamburg,            | 11 c.            | £35   |
| Citrochloric Acid—  |                  |       |
| Lisbon,             | 2 c.             | £20   |
| Coal Products—      |                  |       |
| Aniline Salts       |                  |       |
| New York,           | 39 cks. 40 cs.   |       |
| Creosote Oil        |                  |       |
| Lisbon,             | 250 brls.        |       |
| Naphtha             |                  |       |
| Alexandria,         | 40 dms.          |       |
| Pitch               |                  |       |
| Galatz,             | 5 brls.          |       |
| Malta,              | 50               |       |
| Tar                 |                  |       |
| Galatz,             | 75 brls.         |       |
| Lagos,              | 10               |       |
| Mussera,            | qty.             |       |
| Tar Colours         |                  |       |
| New York,           | 16 cks. 3 kgs.   |       |
| Tar S. lts          |                  |       |
| Boston,             | 6 cks.           |       |
| Cobalt Oxide—       |                  |       |
| Nagasaki,           | 10 c.            | £270  |
| Copper Sulphate—    |                  |       |
| Kurrachee,          | 1 t. 1 c. 2 q.   | £16   |
| Odessa,             | 5 1              | 78    |
| Vigo,               | 5 1 3            | 84    |
| Nantes,             | 42 5             | 634   |
| Sydney,             | 2 5 2            | 6     |
| Madras,             | 2                | 44    |
| Oporto,             | 30 7 1           | 491   |
| Lisbon,             | 20               | 357   |
| Paris,              | 20 19 4          | 286   |
| B. Ayres,           | 2 3              | 36    |
| Genoa,              | 111 9 3          | 1,744 |
| Venice,             | 115 7 5          | 1,889 |
| Rouen,              | 10               | 180   |
| Palermo,            | 1                | 16    |
| Trieste,            | 12 2 2           | 226   |
| Naples,             | 78 13 5          | 1,213 |
| Leghorn,            | 22 10 4          | 376   |
| Batoum,             | 20 1             | 313   |
| Bordeaux,           | 306 14 2         | 4,796 |
| Cette,              | 332 3 2          | 5,630 |
| M. Video,           | 7 5 2            | 123   |
| Copperas—           |                  |       |
| Alexandria,         | 8 t.             | £10   |
| Tripoli,            | 3 19 c. 2 q.     | 6     |
| Melbourne,          | 10 1 2           | 19    |
| Salonica,           | 4                | 7     |
| B. Ayres,           | 3 5              | 6     |
| Teneriffe,          | 1 2              | 3     |
| Cream of Tartar—    |                  |       |
| St. John's, Nfld.,  | 4 c.             | £20   |
| Disinfectants—      |                  |       |
| Rotterdam,          | 3 c.             | £0    |
| Pt. Natal,          | 14               | 16    |
| Dried Blood—        |                  |       |
| Las Palmas,         | 1 t.             | £5    |
| Extracts—           |                  |       |
| Philadelphia,       | 15 c. 3 q.       | £11   |
| Gelatine—           |                  |       |
| New York,           | 100 bxs.         |       |
| Guano—              |                  |       |
| Madeira,            | 30 t.            | £187  |
| Iron Oxide—         |                  |       |
| Rotterdam,          | 1 t. 5 c.        | £10   |
| Lead Acetate—       |                  |       |
| Gothenburg,         | 9 c.             | £11   |
| Lime—               |                  |       |
| Salaverry,          | 22 t. 18 c. 1 q. | £21   |
| Magnesium Sulphate— |                  |       |
| Lisbon,             | 3 cks.           |       |
| Pernambuco,         | 60 kgs.          |       |
| Rio de Janeiro,     | 150              |       |
| Manure—             |                  |       |
| Bordeaux,           | 70 t. 11 c. 5 q. | £117  |
| Antwerp,            | 5 2 4            | 22    |
| Charlotte Town,     |                  |       |
| P.E.I.,             | 10               | 35    |
| Barbadoes,          | 100              | 250   |
| Teneriffe,          | 2                | 26    |
| Rouen,              | 5 10             | 38    |
| Oxalic Acid—        |                  |       |
| Lisbon,             | 1 t. 4 c.        | £11   |
| Boston,             | 6 8              | 192   |
| Barcelona,          | 5 19 3 q.        | 202   |
| Paint—              |                  |       |
| Abonema,            | 18 dms.          |       |
| Acajutla,           | 3 cks.           |       |
| Alexandria,         | 70 kgs.          |       |
| Ambrizette,         | 6                |       |



|                     |     |         |
|---------------------|-----|---------|
| Arecife,            | 30  |         |
| Bakana,             |     | 8       |
| Bombay,             | 2   |         |
| Cadiz,              |     | 60      |
| Cape Coast, 5 brls. | 13  | 5 pks.  |
| Cape Hayti,         | 2   |         |
| Cavite,             |     | 35 dms. |
| Colombo,            | 2   |         |
| Gibraltar,          |     | 10      |
| Gothenburg, 26 tins |     |         |
| Havre,              | 9   |         |
| Kingston,           | 3   |         |
| Lisbon,             |     | 8       |
| Maceio,             | 10  |         |
| Malta,              |     | 25      |
| Manila,             | 640 |         |
| M. Video,           |     | 48      |
| New York, 1 cs.     | 7   | 22      |
| Old Calabar,        |     | 31      |
| Para,               | 4   | 20      |
| Pernambuco,         | 20  | 10 cs.  |
| Rangoon,            |     | 1       |
| San Jose,           | 11  | 100     |
| Sierra Leone,       |     | 12      |
| Sydney,             | 6   |         |
| Walfish Bay,        |     | 10 dms. |
| Yokohama,           | 120 | 38      |

**Painters' Colours—**

|                    |          |          |         |
|--------------------|----------|----------|---------|
| Alexandria,        | 532 pks. | 124 kgs. | 187 cs. |
| Bahia,             |          |          | 88 cs.  |
| Bremen,            | 15 cks.  |          |         |
| B. Ayres,          | 27       |          |         |
| Calcutta,          | 36       |          |         |
| Carupano, 1 brl.   | 400 kgs  |          | 1 cs.   |
| Colon,             | 60 pks.  |          |         |
| Dunkirk,           | 12       |          |         |
| Galatz,            | 5 tcs.   |          | 2 brls. |
| Gibraltar,         |          | 40       |         |
| Halifax,           | 4        |          |         |
| Hamburg,           |          | 195      |         |
| Hong Kong, 5       | 5        |          |         |
| Jaffa,             | 2        |          |         |
| La Libertad,       | 3        |          | 36 cs.  |
| Leghorn,           | 30       |          |         |
| Lisbon, 1 bx.      |          |          |         |
| London, Ont.,      | 4        | 5        |         |
| Malmö,             | 20       |          |         |
| Marseilles,        | 24       |          | 2 brls. |
| Maranham,          |          |          |         |
| New York,          | 3        |          | 22      |
| Para,              | 13 tcs   | 15       | 7       |
| Pernambuco,        | 51       |          | 8       |
| Rio de Janeiro,    |          | 1 cs.    | 4 dms.  |
| Rotterdam,         | 12       |          |         |
| St. John's, Nfld., | 5        |          |         |
| Salonica,          | 3        |          | brls.   |
| Seville,           | 19       |          |         |
| Valencia,          |          | 2 kgs    | 12      |

**Paraffin Wax—**

|                 |         |
|-----------------|---------|
| Pernambuco,     | 10 cs.  |
| Rio de Janeiro, | 5       |
| Valparaiso,     | 12 bgs. |

**Phosphorus—**

|           |      |      |      |
|-----------|------|------|------|
| Hiogo,    | 1 t. | 7 c. | £310 |
| Shanghai, | 1    | 3    | 230  |
| B. Ayres, | 14   | 2 q. | 110  |
| Trinidad, | 2    |      | 20   |

**Picric Acid—**

|           |       |     |
|-----------|-------|-----|
| New York, | 18 c. | £80 |
| Boston,   | 1 t.  | 19  |

**Potassium Bichromate—**

|            |      |      |     |
|------------|------|------|-----|
| Vera Cruz, | 4 c. | 2 q. | £10 |
|------------|------|------|-----|

**Potassium Carbonate—**

|            |       |      |      |
|------------|-------|------|------|
| Baltimore, | 12 t. | 7 c. | £221 |
|------------|-------|------|------|

**Potassium Chlorate—**

|            |      |       |       |
|------------|------|-------|-------|
| Hamburg,   | 2 t. | 10 c. | £99   |
| Shanghai,  | 2    | 10    | 91    |
| Kobe,      | 2    | 11    | 94    |
| Yokohama,  | 2    | 11    | 94    |
| New York,  | 36   | 5     | 1,336 |
| Sydney,    | 4    | 10    | 171   |
| Naples,    |      | 15    | 30    |
| Boston,    | 3    |       | 210   |
| B. Ayres,  | 3    | 4     | 143   |
| Hiogo,     | 10   |       | 411   |
| Ghent,     | 1    |       | 38    |
| Rotterdam, | 2    |       | 80    |

**Potassium Cyanide—**

|           |      |      |     |
|-----------|------|------|-----|
| Savannah, | 5 c. | 1 q. | £37 |
|-----------|------|------|-----|

**Potassium Prussiate—**

|        |       |      |     |
|--------|-------|------|-----|
| Genoa, | 11 c. | 3 q. | £30 |
|--------|-------|------|-----|

**Salt—**

|             |       |
|-------------|-------|
| Amsterdam,  | 60 t. |
| Antwerp,    | 68    |
| Baltimore,  | 15    |
| Benin,      | 31    |
| Boston,     | 200   |
| Brisbane,   | 25    |
| B. Ayres,   | 72    |
| Calcutta,   | 1,655 |
| Copenhagen, | 330   |
| Gefle,      | 200   |
| Ghent,      | 150   |

|                |     |    |
|----------------|-----|----|
| Gd. Bassam,    | 44  | 12 |
| Isles De Los,  | 50  |    |
| Loango,        | 18  |    |
| Manila,        |     | 8  |
| Melbourne,     | 82  |    |
| Monrovia,      | 12  | 10 |
| M. Video,      | 5   | 11 |
| Norrköping,    | 62  |    |
| Old Calabar,   | 90  |    |
| Opobo,         | 80  |    |
| Para,          | 121 | 16 |
| Portland, O.,  | 499 | 19 |
| Quillo,        | 45  |    |
| Rio Del Rey,   | 28  |    |
| Rotterdam,     | 240 |    |
| San Francisco, | 75  |    |
| Santos,        | 7   | 16 |
| Sydney,        | 135 |    |
| Transiswaga,   | 72  |    |
| Ukaka,         | 25  |    |
| Valparaiso,    | 5   |    |

**Salt Cake—**

|              |        |       |      |
|--------------|--------|-------|------|
| Terneuzen,   | 255 t. | 15 c. | £320 |
| Delagoa Bay, | 29     | 17    | 74   |
| Acacjutla,   | 2      |       | 6    |
| Baltimore,   | 327    | 19    | 425  |
| Genoa,       | 2      |       | 3    |

**Saltpetre—**

|                 |      |       |      |     |
|-----------------|------|-------|------|-----|
| Vera Cruz,      | 1 t. | 19 c. | 1 q. | £43 |
| Pernambuco,     | 5    | 14    | 1    | 135 |
| Ceara,          | 3    |       |      | 69  |
| Rio de Janeiro, | 2    | 15    | 1    | 65  |

**Sheep Dip—**

|               |      |       |      |     |
|---------------|------|-------|------|-----|
| M. Video,     | 3 t. | 16 c. | 2 q. | £90 |
| Portland, O., | 9    | 10    |      | 900 |
| Calcutta,     | 1    | 2     | 1    | 25  |
| B. Ayres,     | 8    | 18    | 2    | 250 |

**Slag—**

|                 |      |     |
|-----------------|------|-----|
| Auckland, N.Z., | 5 t. | £18 |
|-----------------|------|-----|

**Soap—**

|                   |        |          |          |
|-------------------|--------|----------|----------|
| Alexandria,       | 20 bxs | 4 cs.    | 17 brls. |
| Algoa Bay,        | 341    |          | 240 pks  |
| Amsterdam,        | 305    | 820      |          |
| Arica,            |        | 1        |          |
| Barbadoes,        |        | 2        |          |
| Barranquilla,     |        | 20       |          |
| Benin,            | 500    |          |          |
| Boston,           |        | 30 tcs.  |          |
| Brass,            | 100    |          |          |
| Calcutta,         | 57     | 250 bdl. |          |
| Canaria,          | 465    |          |          |
| Cameroons,        | 50     |          |          |
| Cape Coast,       | 75     |          |          |
| Cape Town,        | 530    |          |          |
| Colon,            | 200    |          |          |
| Curacao,          | 50     |          |          |
| Ferrol,           | 8      |          |          |
| Gibraltar,        | 500    |          |          |
| Havre,            |        | 230      |          |
| Hong Kong,        |        | 200 dms. |          |
| Madras,           | 4      |          |          |
| Manaos,           | 100    |          |          |
| Melilla,          | 25     |          |          |
| Montreal,         | 500    | 20 kgs.  |          |
| New York,         | 25     | 28       | 9 pks.   |
| Para,             | 700    |          |          |
| Patras,           |        | 3        |          |
| Portland,         |        | 23       |          |
| Pt. Natal,        | 1,105  |          | 76 bdl.  |
| Pt. Said,         |        | 1        |          |
| Rangoon,          |        | 2        |          |
| Rotterdam,        |        | 409      |          |
| S. John's, Nfld., | 421    |          | 26       |
| St. Thomas,       | 65     |          |          |
| Singapore,        | 2,625  |          |          |
| Shanghai,         | 5,540  |          |          |
| Trinidad,         | 440    |          |          |
| Victoria,         | 40     |          |          |

**Soda—**

|             |         |
|-------------|---------|
| Alexandria, | 26 dms. |
|-------------|---------|

**Soda Alkali—**

|          |         |
|----------|---------|
| Dunedin, | 80 brls |
| Genoa,   | 97      |
| Panama,  | 25      |
| Smyrna,  | 50      |

**Soda Ash—**

|             |          |          |           |
|-------------|----------|----------|-----------|
| Antwerp,    | 260 bgs. |          |           |
| Baltimore,  | 3,322    | 237 cks. | 117 pks.  |
|             |          |          | 211 tcs.  |
| Barcelona,  |          | 20       |           |
| Bombay,     |          |          | 31 brls.  |
| Boston,     | 1,480    | 107      | 33 tcs.   |
| Brisbane,   |          | 139      |           |
| B. Ayres    |          |          | 550 brls. |
| Copenhagen, | 5        | 5        |           |
| Corfu,      |          |          | 50        |
| Genoa,      | 400      |          |           |
| Ghent,      | 100      |          |           |
| Gothenburg, | 50       | 20       |           |
| Hiogo,      | 601      |          |           |
| Kalmar,     | 40       |          |           |
| Maranham,   |          |          | 50        |

|                     |       |             |
|---------------------|-------|-------------|
| Melbourne,          | 34    |             |
| M. Video,           | 200   |             |
| Montreal,           | 95    | 154         |
| New York,           | 2,292 | 50 148 tcs. |
| Oporto,             | 20    |             |
| Paysandu,           |       | 75 brls.    |
| Philadelphia, 3 263 |       |             |
| Porto Alegre,       | 340   |             |
| Rio de Janeiro,     | 80    | 150         |
| St. John,           | 80    |             |
| Sydney,             | 271   | 10          |
| Toronto,            | 16    |             |
| Varna,              | 50    |             |
| Wellington,         | 103   |             |
| Yokohama,           | 500   |             |

**Soda Crystals—**

|             |          |           |
|-------------|----------|-----------|
| Barcelona,  | 30 bgs.  |           |
| Boston,     |          | 280 brls. |
| Hong Kong,  | 20 cks.  |           |
| E. London,  |          | 50        |
| Malta,      | 50       |           |
| Montreal,   | 135      | 334       |
| Quebec,     | 825 kgs. |           |
| Toronto,    |          | 305       |
| Valparaiso, |          | 76        |
|             |          | 50        |

**Soda Oxide—**

|           |        |
|-----------|--------|
| New York, | 10 cs. |
|-----------|--------|

**Sodium Arseniate—**

|         |        |
|---------|--------|
| Lisbon, | 4 cks. |
|---------|--------|

**Sodium Bicarbonate—**

|                 |         |            |
|-----------------|---------|------------|
| Antwerp,        | 20 kgs. | 20 cks.    |
| Barcelona,      | 280     |            |
| Batavia,        |         | 2          |
| Bombay,         | 200     |            |
| B. Ayres,       | 20      | 37         |
| Cape Town,      | 5       |            |
| E. London,      |         | 20 bgs.    |
| Galatz,         | 20      | 60 brls.   |
| Genoa,          |         | 36         |
| Halifax,        | 165     |            |
| Hiogo,          | 500     |            |
| Marseilles,     | 135     | 20         |
| Melbourne,      | 180     | 18         |
| M. Video,       |         | 10         |
| Montreal,       | 494     | 50 bgs. 15 |
| Newcastle,      | 100     |            |
| N. Orleans,     | 209     | 75         |
| New York,       | 30      |            |
| Odessa,         | 100     |            |
| Paris,          | 214     | 35 brls.   |
| Philadelphia,   |         | 46         |
| Rio de Janeiro, | 5       |            |
| Rotterdam,      | 150     |            |
| Stettin,        | 15      | 2          |
| Stockholm,      | 50      |            |
| Sydney,         | 200     |            |
| Tampico,        | 27      |            |
| Trieste,        |         | 130 pks. 8 |
| Trinidad,       | 100     |            |
| Valparaiso,     | 20      |            |
| Wellington,     | 20      | 10 bgs.    |
| Yokohama,       | 900     |            |

**Sodium Bichromate—**

|           |         |
|-----------|---------|
| Rouen,    | 14 cks. |
| Salonica, | 1       |

**Sodium Carbonate—**

|         |         |
|---------|---------|
| Boston, | 56 brls |
|---------|---------|

**Sodium Chlorate—**

|                  |          |       |
|------------------|----------|-------|
| Sodium Chlorate— |          |       |
| Boston,          | 100 kgs. |       |
| New York,        | 15       |       |
| Philadelphia,    | 100      |       |
| Rotterdam,       | 10       |       |
| Stettin,         | 10       | 1 ck. |

**Sodium Fluoride—**

|          |          |
|----------|----------|
| Stettin, | 134 bgs. |
|----------|----------|

**Sodium Silicate—**

|           |         |
|-----------|---------|
| Leghorn,  | 6 brls. |
| Malta,    | 15 cks. |
| Vigo,     | 20      |
| Yokohama, | 71      |

**Sodium Sulphate—**

|         |        |
|---------|--------|
| Bombay, | 50 bgs |
|---------|--------|

**Starch—**

|         |       |
|---------|-------|
| Bombay, | 1 cs. |
|---------|-------|

**Sulphur—**

|                |      |       |      |     |
|----------------|------|-------|------|-----|
| Halifax,       | 2 t. | 11 c. | 2 q. | £17 |
| E. London,     | 3    | 12    |      | 14  |
| Boston,        | 277  | 19    |      | 905 |
| Beira,         | 1    |       |      | 7   |
| Portland, Me., |      | 12    |      | 4   |
| Vera Cruz,     |      | 17    | 3    | 5   |
| Para,          | 1    |       |      | 6   |
| Ceara,         |      | 10    |      | 3   |
| Colombo,       | 1    | 1     |      | 5   |

**Sulphuric Acid—**

|         |       |     |
|---------|-------|-----|
| Manaos, | 18 c. | £10 |
| Beira,  | 15    | 8   |

**Superphosphates—**

|                  |         |       |      |  |
|------------------|---------|-------|------|--|
| Superphosphates— |         |       |      |  |
| Gd. Canary,      | 50 bgs. |       |      |  |
| Barcelona,       | 155 t.  |       |      |  |
| Valencia,        | 135     | 18 c. | 3 q. |  |
| Madeira,         | 25      |       |      |  |
| Las Palmas,      | 51      |       |      |  |

**Tannic Acid—**

|         |  |      |
|---------|--|------|
| Oporto, |  | 1 c. |
|---------|--|------|

**Tin Crystals—**

|           |       |      |
|-----------|-------|------|
| Trinidad, | 10 c. | 3 q. |
|-----------|-------|------|

**Varnish—**

|            |         |
|------------|---------|
| Acacjutla, | 1 ck.   |
| Genoa,     | 5 brls. |

**Verdigris—**

|         |      |      |
|---------|------|------|
| Quebec, | 4 c. | 2 q. |
|---------|------|------|

**White Lead—**

|           |         |
|-----------|---------|
| B. Ayres, | 20 cks. |
|-----------|---------|

**Zinc Chloride—**

|         |      |
|---------|------|
| Odessa, | 8 c. |
|---------|------|

**MANCHESTER**

Week ending April 22nd.

**Alum—**

|             |          |
|-------------|----------|
| Alexandria, | 50 brls. |
|-------------|----------|

**Ammonium Carbonate—**

|          |         |
|----------|---------|
| Hamburg, | 16 cks. |
|----------|---------|

**Ammonium Chloride—**

|           |          |
|-----------|----------|
| Bussorah, | 10 brls. |
| Limassol, | 2        |

**Aniline Colours—**

|            |       |       |
|------------|-------|-------|
| Hamburg,   | 2 cs. | 1 kg. |
| Rotterdam, |       | 1 ck. |

**Aniline Oil—**

|            |        |
|------------|--------|
| Rotterdam, | qty.   |
| Genoa,     | 3 dms. |
| Rouen,     | 1      |

**Aniline Salts—**

|          |         |
|----------|---------|
| Hamburg, | 8 brls. |
| Genoa,   | 5 cks.  |

**Carbolic Acid—**

|          |         |           |
|----------|---------|-----------|
| Treport, | 14 cks. | 167 brls. |
|----------|---------|-----------|

**Caustic Soda—**

|             |         |
|-------------|---------|
| Alexandria, | 36 dms. |
| Treport,    | 30      |

**Colours—**

|          |        |
|----------|--------|
| Hamburg, | 3 cks. |
|----------|--------|

**Copperas—**

|             |          |
|-------------|----------|
| Alexandria, | 30 brls. |
| Alexandria, | 70       |

**Cutch—**

|          |      |
|----------|------|
| Treport, | 1 bx |
|----------|------|

**Farina—**

|          |         |
|----------|---------|
| Hamburg, | 10 cks. |
|----------|---------|

**Glue—**

|            |           |
|------------|-----------|
| Rotterdam, | 30 cks.</ |
|------------|-----------|



|                             |            |            |
|-----------------------------|------------|------------|
| erg,                        | 7          | 20         |
| ec,                         | 275        | 50         |
| rk,                         | 25         |            |
| am,                         | 29         | 50         |
| lam,                        |            | 15         |
| h,                          |            | 25         |
|                             | 96         | 3          |
| eed Oil—                    |            | 6          |
| lam,                        | 507 c.     |            |
| h,                          | 1,778      |            |
|                             | 88         |            |
|                             | 277        |            |
| nsand,                      | 35         |            |
|                             | 200        |            |
| burg,                       | 47         |            |
| re,                         | 1,001      |            |
| h,                          | 100        |            |
| ies,                        | 800        |            |
| am,                         | 1,313      |            |
|                             | 100        |            |
|                             | 130        |            |
| o—                          |            |            |
| rk,                         | 500 brls.  |            |
| fts (otherwise undescribed) |            |            |
| lam,                        | 120 cks.   |            |
| min,                        | 25 bgs.    |            |
|                             | 2 cs.      |            |
| am,                         | 5          |            |
| k,                          | 2 bgs.     |            |
|                             | 2 cks.     |            |
| burg,                       | 1 cs.      |            |
| Oil—                        |            |            |
| dam,                        | 251 c.     |            |
| ad,                         | 35         |            |
| pi,                         | 11         |            |
| y,                          | 10         |            |
| y,                          | 1,009      |            |
| ux,                         | 30         |            |
| ania,                       | 651        |            |
| agen,                       | 17         |            |
| eim,                        | 322        |            |
| rg,                         | 113        |            |
| hec,                        | 50         |            |
| lam,                        | 271        |            |
| ger,                        | 129        |            |
| —                           |            |            |
| eim,                        | 84 t.      |            |
| k,                          | 675 sks.   |            |
|                             | 1,400 bgs. |            |
| ia—                         |            |            |
| pi,                         | 4 cks.     |            |
| yi,                         | 11 dms.    |            |
| rs Colours—                 |            |            |
| dam,                        | 18 cks.    | 1 pk.      |
| pi,                         | 8          | 1 cs. 16   |
| y,                          | 13         | 266 1,924  |
| i,                          | 3          |            |
| ania,                       | 20         |            |
| agen,                       | 20         | 1 2 dms.   |
| eim,                        | 2          | 1 228 pks. |
| k,                          | 2          |            |
|                             | 4          |            |
| burg,                       | 30         |            |
| rg,                         | 19         | 1          |
|                             | 24         | 3 1        |
| berg,                       | 5          | 2          |
| hec,                        | 2          | 22         |
| n,                          | 2          |            |
| ork,                        |            | 30         |
| ping,                       | 12         |            |
| dam,                        | 2          |            |
|                             | 5          | 1          |
|                             | 30         |            |
|                             | 26         | 1          |
| nd,                         | 1 ck.      | 10 kgs.    |
| pi,                         | 435 t.     |            |
| m,                          | 298        |            |
| dam,                        | 10 cks.    |            |
|                             |            |            |
| ania,                       | 1 cs.      |            |
| urg,                        | 2          |            |
|                             |            |            |
| dam,                        | 31 cks.    |            |
| nd,                         | 3          |            |
| rp,                         | 11         |            |
| n,                          | 25         |            |
| n,                          | 3          |            |
| ania,                       | 10         |            |
| hagen,                      | 2          |            |
| sberg,                      | 1          |            |
| dam,                        | 13         |            |
|                             |            |            |
| ork,                        | 1 dm.      |            |
| e—                          |            |            |
| k,                          | 90 cks.    |            |
| atine—                      |            |            |
| iy,                         | 60 dms.    |            |

|                 |             |
|-----------------|-------------|
| <b>Varnish—</b> |             |
| Antwerp,        | 1 cs. 1 pk. |
| Christiania,    | 1           |
| Ghent,          | 1 ck. 3     |
| Gothenburg,     | 1           |
| Hamburg,        | 1           |
| Rouen,          | 2           |

**GLASGOW.**

Week ending April 23rd.

|                                            |             |
|--------------------------------------------|-------------|
| <b>Albumen—</b>                            |             |
| Boston,                                    | £64         |
| U.S.A.,                                    | 67          |
| <b>Ammonia—</b>                            |             |
| Bombay,                                    | 1 t. 11½ c. |
| <b>Ammonium Sulphate—</b>                  |             |
| Bordeaux,                                  | 5 t.        |
| Genoa,                                     | 40 10½ c.   |
| Mauritius,                                 | 307 9       |
| Pt. Louis,                                 | 51 15½      |
| Java,                                      | 127         |
| Spain,                                     | 88 14½      |
| <b>Bleaching Powder—</b>                   |             |
| Melbourne,                                 | 4 t. 16½ c. |
| <b>Castor Oil—</b>                         |             |
| Adelaide,                                  | £88         |
| <b>Caustic Soda—</b>                       |             |
| Melbourne,                                 | 5 t. 8½ c.  |
| <b>Chemicals (otherwise unadvised)</b>     |             |
| Ootacamund,                                | £50         |
| <b>Chloroform—</b>                         |             |
| Canada,                                    | £21         |
| <b>Coal Products—</b>                      |             |
| <b>Aniline Colours</b>                     |             |
| U.S.A.,                                    | £41         |
| <b>Benzol</b>                              |             |
| Hamburg,                                   | 2 t. 17 c.  |
| <b>Creosote</b>                            |             |
| France,                                    | £1,050      |
| <b>Naphtha</b>                             |             |
| Rouen,                                     | £180        |
| Havre,                                     | 16 t.       |
| <b>Pitch</b>                               |             |
| Bombay,                                    | £68         |
| Havre,                                     | 535 t.      |
| U.S.A.,                                    | 428         |
| Cette,                                     | 474         |
| Rouen,                                     | 425         |
| Antwerp,                                   | 36 10 c.    |
| <b>Pitch and Tar</b>                       |             |
| Karachi,                                   | £9          |
| <b>Tar</b>                                 |             |
| Madras,                                    | £40         |
| <b>Tar Acids</b>                           |             |
| U.S.A.,                                    | £35         |
| <b>Tar Oil</b>                             |             |
| Hamburg,                                   | 11 t.       |
| <b>Coal Products (otherwise unadvised)</b> |             |
| Rotterdam,                                 | £930        |
|                                            | 9 t.        |
| <b>Cod Oil—</b>                            |             |
| Melbourne,                                 | £60         |
| Adelaide,                                  | 53          |
| <b>Copperas—</b>                           |             |
| Bombay,                                    | £102        |
| Calcutta,                                  | 22          |
| Karachi,                                   | 97          |
| Madras,                                    | 170         |
| <b>Dyestuffs (otherwise unadvised)</b>     |             |
| Ipswich,                                   | £33         |
| <b>Extracts—</b>                           |             |
| Victoria,                                  | £243        |
| U.S.A.,                                    | 96          |
| Canada,                                    | 52          |
| Cornwall,                                  | 32          |
| <b>Farina—</b>                             |             |
| Calcutta,                                  | £108        |
| <b>Gelatine—</b>                           |             |
| Sydney,                                    | £90         |
| <b>Iron Sulphate—</b>                      |             |
| Karachi,                                   | 20 t. 5½ c. |
| <b>Linseed Oil—</b>                        |             |
| Brisbane,                                  | 2 t. 1½ c.  |
| Cape Town,                                 | 2 14½       |
| Colombo,                                   | 1 8         |
| Adelaide,                                  | 4 9½        |
| Melbourne,                                 | 1 ¾         |
| <b>Magnesium Sulphate—</b>                 |             |
| Adelaide,                                  | £27         |
| <b>Manure—</b>                             |             |
| Demerara,                                  | 35 t. 8 c.  |
| Jamaica,                                   | 5           |
| <b>Paint—</b>                              |             |
| Natal,                                     | £195        |
| Cape Town,                                 | 40          |
| U.S.A.,                                    | 101         |

**Painters' Colours—**

|                              |             |
|------------------------------|-------------|
| Adelaide,                    | £157        |
| Calcutta,                    | 378         |
| Colombo,                     | 29          |
| Mauritius,                   | 115         |
| Sydney,                      | 291         |
| Melbourne,                   | 62          |
| Rangoon,                     | 94          |
| U.S.A.,                      | 36          |
| <b>Paraffin Wax—</b>         |             |
| Bordeaux,                    | £195        |
| Genoa,                       | 625         |
| Nantes,                      | 34          |
| Barcelona,                   | 26          |
| Cape Town,                   | 53          |
| Spain,                       | 50          |
| Catania,                     | 20          |
| <b>Phosphoric Acid—</b>      |             |
| Calcutta,                    | £40         |
| <b>Potassium Bichromate—</b> |             |
| Antwerp,                     | £202        |
| Genoa,                       | 196         |
| Ghent,                       | 102         |
| Leghorn,                     | 26          |
| Rouen,                       | 312         |
| Victoria,                    | 96          |
| Canada,                      | 238         |
| U.S.A.,                      | 238         |
| <b>Salts of Potash—</b>      |             |
| Delagoa Bay,                 | 14 t. 9¾ c. |
| Mexico City,                 | £423        |
| <b>Soap—</b>                 |             |
| Colombo,                     | 1 t. 5 c.   |
| U.S.A.,                      | 5           |
| <b>Sodium Bichromate—</b>    |             |
| Genoa,                       | 11 t.       |
| Ghent,                       | 2 10 c.     |
| Rouen,                       | 24 13½      |
| <b>Sodium Sulphate—</b>      |             |
| Bombay,                      | 7 t. 10 c.  |
| <b>Sulphuric Acid—</b>       |             |
| Madras,                      | £54         |
| Rangoon,                     | 278         |
| <b>Treacle—</b>              |             |
| Rotterdam,                   | 10 t. 2 c.  |
| E. London,                   | 3           |
| Christiania,                 | 15 2        |
| <b>White Lead—</b>           |             |
| Cape Town,                   | £30         |
| Transvaal,                   | 88          |

**TYNE.**

Week ending April 18th.

|                          |             |
|--------------------------|-------------|
| <b>Alkali—</b>           |             |
| Savona,                  | 41 t. 11 c. |
| Rotterdam,               | 4 4         |
| Antwerp,                 | 15 7        |
| Hamburg,                 | 5 8         |
| Amsterdam,               | 27 3        |
| Bergen,                  | 2 17        |
| Riga,                    | 29 12       |
| <b>Aluminous Cake—</b>   |             |
| Copenhagen,              | 50 t. 13 c. |
| <b>Anthraccene—</b>      |             |
| Rotterdam,               | 38 t. 18 c. |
| <b>Antimony—</b>         |             |
| Rotterdam,               | 1 t.        |
| Hamburg,                 | 1 10 c.     |
| Reval,                   | 5 6         |
| <b>Barium Binoxide—</b>  |             |
| Hamburg,                 | 1 t. 1 c.   |
| <b>Barium Carbonate—</b> |             |
| Rotterdam,               | 100 t.      |
| Hamburg,                 | 144 3 c.    |
| <b>Bleaching Powder—</b> |             |
| Drontheim,               | 10 t. 2 c.  |
| Copenhagen,              | 1 14        |
| Gothenburg,              | 15 4        |
| Rotterdam,               | 13 12       |
| Antwerp,                 | 114 6       |
| Hamburg,                 | 38 11       |
| Amsterdam,               | 13 9        |
| Riga,                    | 38 5        |
| <b>Borax—</b>            |             |
| Aarhus,                  | 1 t. 5 c.   |
| <b>Caustic Soda—</b>     |             |
| Genoa,                   | 10 t. 14 c. |
| Drontheim,               | 3           |
| Odense,                  | 2 6         |
| Copenhagen,              | 33 3        |
| Musik,                   | 10 10       |
| Gothenburg,              | 5 16        |
| Antwerp,                 | 27 1        |
| Hamburg,                 | 25 16       |
| Amsterdam,               | 7 16        |
| Reval,                   | 17 17       |
| <b>Litharge—</b>         |             |
| Rotterdam,               | 1 t. 2 c.   |
| Riga,                    | 7 7         |

**Magnesia—**

|                          |             |
|--------------------------|-------------|
| Antwerp,                 | 12 c.       |
| Hamburg,                 | 18          |
| <b>Paint—</b>            |             |
| Bergen,                  | 7 c.        |
| Antwerp,                 | 4 t.        |
| Hamburg,                 | 1 15        |
| <b>Rosin Oil—</b>        |             |
| Antwerp,                 | 3 t. 12 c.  |
| Hamburg,                 | 1 2         |
| <b>Soda—</b>             |             |
| Genoa,                   | 5 t.        |
| Aalborg,                 | 6           |
| Rotterdam,               | 10          |
| Amsterdam,               | 30 4 c.     |
| Christiania,             | 10          |
| Riga,                    | 36 10       |
| Svendborg,               | 47 10       |
| <b>Soda Ash—</b>         |             |
| Riga,                    | 6 t. 13 c.  |
| <b>Sodium Nitrate—</b>   |             |
| Laurvig,                 | 12 c.       |
| <b>Sodium Silicate—</b>  |             |
| Malta,                   | 3 t. 2 c.   |
| <b>Sulphate of Lime—</b> |             |
| Genoa,                   | 10 t. 18 c. |
| <b>Sulphur—</b>          |             |
| Gothenburg,              | 20 t.       |
| Christiania,             | 50          |
| Riga,                    | 30          |
| <b>Superphosphate—</b>   |             |
| Arendal,                 | 8 t.        |
| <b>Tallow—</b>           |             |
| Genoa,                   | 12 t. 1 c.  |
| <b>Varnish—</b>          |             |
| Christiania,             | 1 c.        |
| <b>White Lead—</b>       |             |
| Copenhagen,              | 2 t. 15 c.  |
| Riga,                    | 2 17        |

**GOOLE.**

Week ending April 15th.

|                                            |            |
|--------------------------------------------|------------|
| <b>Benzol—</b>                             |            |
| Rotterdam,                                 | 49 cks.    |
| <b>Chemicals (otherwise unadvised)</b>     |            |
| Amsterdam,                                 | 48 cks.    |
| Ghent,                                     | 1          |
| <b>Coal Products (otherwise unadvised)</b> |            |
| Amsterdam,                                 | 12 cks.    |
| Antwerp,                                   | 2          |
| Boulogne,                                  | 5          |
| Ghent,                                     | 3          |
| Hamburg,                                   | 28         |
| Rotterdam,                                 | 42 20 dms. |
| <b>Colours—</b>                            |            |
| Boulogne,                                  | 2 cks.     |
| Ghent,                                     | 2          |
| Hamburg,                                   | 2          |
| Harlingen,                                 | 1 cs.      |
| Rotterdam,                                 | 3 1        |
| Rouen,                                     | 1          |
| <b>Dyestuffs (otherwise unadvised)</b>     |            |
| Dunkirk,                                   | 15 bgs.    |
| Hamburg,                                   | 143 cks.   |
| Ghent,                                     | 1          |
| <b>Manure—</b>                             |            |
| Dunkirk,                                   | 200 bgs.   |
| Boulogne,                                  | 89         |
| Ghent,                                     | 200        |
| Hamburg,                                   | 310        |
| Ostend,                                    | 481        |
| <b>Pitch—</b>                              |            |
| Antwerp,                                   | 269 t.     |
| Dunkirk,                                   | 721        |

**GRIMSBY.**

Week ending April 18th.

|                                            |                  |
|--------------------------------------------|------------------|
| <b>Caoutchouc—</b>                         |                  |
| Esbjerg,                                   | 1 ble.           |
| <b>Chemicals (otherwise unadvised)</b>     |                  |
| Hamburg,                                   | 23 dms.          |
| Rotterdam,                                 | 34               |
| <b>Coal Products (otherwise unadvised)</b> |                  |
| Dieppe,                                    | 123 cks. 2 tins. |
| Hamburg,                                   | 26 btl.          |
| <b>Colours—</b>                            |                  |
| Antwerp,                                   | 4 cks. 4 cs.     |
| Dieppe,                                    | 1                |
| Hamburg,                                   | 1                |
| Rotterdam,                                 | 1                |
| <b>Dyestuffs (otherwise unadvised)</b>     |                  |
| Dieppe,                                    | 1 ck.            |
| <b>Manure—</b>                             |                  |
| Antwerp,                                   | 31 t.            |
| Esbjerg,                                   | 1,000 bgs.       |



## PRICES CURRENT.

WEDNESDAY, APR 29TH

PREPARED BY MESSRS. HIGGINBOTTOM AND CO., 116, PORTLAND STREET, MANCHESTER.

The values stated are F.O.R. at maker's works, or at usual ports of shipment in U.K. The price in different localities may

## Acids:—

|                                         | £            | s.   | d.      |
|-----------------------------------------|--------------|------|---------|
| Acetic, 25 % and 40 % .. .. .           | per cwt.     | 6/   | & 9/-   |
| " Glacial .. .. .                       | "            | 40/- |         |
| Arsenic S.G., 2000° .. .. .             | "            | 1    | 2 0     |
| Fluoric .. .. .                         | per lb.      | 0    | 0 3½    |
| Muriatic (Tower Salts), 30° Tw. .. .. . | per bottle   | 0    | 0 10    |
| " (Cylinder), 30° Tw. .. .. .           | "            | 0    | 3 0     |
| Nitric 80° Tw. .. .. .                  | per lb.      | 0    | 0 1½    |
| Nitrous .. .. .                         | "            | 0    | 0 1½    |
| Oxalic .. .. .                          | nett         | "    | 0 0 3½  |
| Phosphoric, 1750° .. .. .               | "            | 0    | 1 0     |
| Picric .. .. .                          | "            | 0    | 0 11    |
| Sulphuric (fuming 50 %/.) .. .. .       | per ton      | 15   | 10 0    |
| " (monohydrate) .. .. .                 | "            | 5    | 10 0    |
| " (Pyrites, 168°) .. .. .               | "            | 3    | 0 0     |
| " " 150° .. .. .                        | "            | 1    | 5 0     |
| " (free from arsenic, 145°) .. .. .     | "            | 1    | 7 6     |
| Sulphurous (solution) S.G. 1025 .. .. . | "            | 3    | 0 0     |
| Tannic (pure) .. .. .                   | per lb.      | 0    | 1 2½    |
| Tartaric .. .. .                        | "            | 0    | 1 3     |
| Arsenic, white powdered .. .. .         | nett per ton | 22   | 10 0    |
| Alum (loose lump) .. .. .               | "            | 4    | 12 6    |
| Alumina Sulphate (pure) .. .. .         | "            | 4    | 12 6    |
| Aluminoferri .. .. .                    | "            | 2    | 5 0     |
| Aluminium .. .. .                       | per lb.      | 0    | 2 10    |
| Ammonia, Anhydrous .. .. .              | "            | 0    | 1 3     |
| " 880=28° B. .. .. .                    | per lb.      | 0    | 0 2½    |
| " =24° B. .. .. .                       | "            | 0    | 0 1¾    |
| " Carbonate .. .. .                     | nett         | "    | 0 0 3¼  |
| " Muriate .. .. .                       | per ton      | 22   | 0 0     |
| " (sal-ammoniac) 1st & 2nd .. .. .      | per cwt.     | 39/- | & 37/-  |
| " Nitrate .. .. .                       | per ton      | 37   | 10 0    |
| " Phosphate .. .. .                     | per lb.      | 0    | 0 6½    |
| " Sulphate (grey) London .. .. .        | per ton      | 8    | 3 9     |
| " (grey) Hull .. .. .                   | "            | 8    | 2 6     |
| Aniline Oil (pure) .. .. .              | per lb.      | 0    | 7 ¼     |
| Aniline Salt .. .. .                    | "            | 0    | 0 6¾    |
| Antimony .. .. .                        | per ton      | 30   | 10 0    |
| " (tartar emetic) .. .. .               | per lb.      | 0    | 9 ½     |
| " (golden sulphide) .. .. .             | "            | 0    | 0 10    |
| Barium Chloride .. .. .                 | per ton      | 7    | 0 0     |
| " Carbonate (native) .. .. .            | "            | 3    | 10 0    |
| " Sulphate (native levigated) .. .. .   | "            | 42,6 | 10 6½   |
| Bleaching Powder, 35 % .. .. .          | nett         | "    | 6 17 6  |
| " Liquor, 7 % .. .. .                   | "            | 3    | 10 0    |
| Bisulphide of Carbon .. .. .            | "            | 12   | 10 0    |
| Chromium Acetate (crystal) .. .. .      | per lb.      | 0    | 0 6     |
| Calcium Chloride .. .. .                | per ton      | 2    | 2 6     |
| China Clay (at Runcorn) in bulk .. .. . | "            | 15/- | to 30/- |

## Coal Tar Products and Dyes:—

|                                            |                   |    |       |
|--------------------------------------------|-------------------|----|-------|
| Alizarine (artificial) 20 % .. .. .        | nett per lb.      | 0  | 0 7½  |
| Magenta .. .. .                            | "                 | 0  | 3 9   |
| Anthracene, 30 % A, f.o.b. London .. .. .  | per unit per cwt. | 0  | 0 11½ |
| Benzol, 90 % .. .. .                       | per gallon        | 0  | 2 0   |
| " 50/90 .. .. .                            | "                 | 0  | 1 8   |
| Carbolic Acid (crystallised 40°) .. .. .   | per lb.           | 0  | 0 7½  |
| " (crude 60°) .. .. .                      | per gallon        | 0  | 2 1   |
| Creosote (ordinary) .. .. .                | "                 | 0  | 0 1   |
| " (filtered for Lucigen light) .. .. .     | "                 | 0  | 0 1¾  |
| Crude Naphtha 30 % @ 120° C. .. .. .       | "                 | 0  | 0 8   |
| Grease Oils, 22° Tw. .. .. .               | per ton           | 2  | 10 0  |
| Pitch, f.o.b. Liverpool or Garston .. .. . | "                 | 1  | 12 6  |
| Solvent Naphtha, 90 % at 160° .. .. .      | per gallon        | 0  | 1 3   |
| " Lucigen" and "Wells" Oils .. .. .        | "                 | 0  | 0 2½  |
| Copper .. .. .                             | per ton           | 44 | 5 0   |
| " Sulphate .. .. .                         | "                 | 18 | 0 0   |
| " Oxide (copper scales) .. .. .            | "                 | 41 | 10 0  |
| Glycerine (crude) .. .. .                  | "                 | 36 | 0 0   |
| " (distilled S.G. 1250°) .. .. .           | "                 | 75 | 0 0   |
| Iodine .. .. .                             | nett, per oz.     | 0  | 0 9   |
| Iron Sulphate (copperas) .. .. .           | per ton           | 1  | 5 0   |
| " Sulphide (antimony slag) .. .. .         | "                 | 2  | 0 0   |
| Lead (sheet) for cash .. .. .              | "                 | 12 | 10 0  |
| " Litharge Flake (ex ship) .. .. .         | "                 | 14 | 10 0  |
| " Acetate (white) .. .. .                  | "                 | 21 | 10 0  |
| " " brown " .. .. .                        | "                 | 16 | 0 0   |
| " Carbonate (white lead) pure .. .. .      | "                 | 16 | 0 0   |
| " Nitrate .. .. .                          | "                 | 19 | 0 0   |

|                                                            |                  |    |  |
|------------------------------------------------------------|------------------|----|--|
| Lime, Acetate (brown) (ex ship) .. .. .                    | per ton          | 4  |  |
| " " (grey) (ex ship) .. .. .                               | "                | 7  |  |
| Magnesium (ribbon and wire) .. .. .                        | per oz.          | 0  |  |
| " Chloride (ex ship) .. .. .                               | per ton          | 2  |  |
| " Carbonate .. .. .                                        | per cwt.         | 1  |  |
| " Calcined Magnesia .. .. .                                | per ton          | 9  |  |
| " Sulphate (Epsom Salts) .. .. .                           | per ton          | 2  |  |
| Manganese, Sulphate .. .. .                                | "                | 16 |  |
| " Borate .. .. .                                           | per cwt.         | 2  |  |
| " Ore, 70 % .. .. .                                        | per ton          | 3  |  |
| Methylated Spirit, 61° O.P. .. .. .                        | per gallon       | 0  |  |
| Naphtha (Wood), Solvent .. .. .                            | "                | 0  |  |
| " " Miscible, 60° O.P. .. .. .                             | "                | 0  |  |
| Oils:—                                                     |                  |    |  |
| Cotton-seed .. .. .                                        | per ton          | 17 |  |
| Linseed .. .. .                                            | "                | 20 |  |
| Petroleum, American .. .. .                                | per gallon       | 0  |  |
| Stearine .. .. .                                           | per ton          | 22 |  |
| Phosphorus (yellow) .. .. .                                | per lb.          | 0  |  |
| " (red) .. .. .                                            | "                | 0  |  |
| Potassium (metal) .. .. .                                  | per oz.          | 0  |  |
| " Bichromate .. .. .                                       | nett per lb.     | 0  |  |
| " Carbonate, 90% (ex ship) .. .. .                         | per ton          | 6  |  |
| " Chlorate .. .. .                                         | per lb.          | 0  |  |
| " Cyanide, 98% .. .. .                                     | "                | 0  |  |
| " Hydrate (Caustic Potash) .. 90 % .. .. .                 | per ton          | 14 |  |
| " " (Caustic Potash) 75/80 % .. .. .                       | "                | 20 |  |
| " " (Caustic Potash) 70/75 % .. .. .                       | "                | 19 |  |
| " Nitrate (refined) .. .. .                                | per cwt.         | 1  |  |
| " Permanganate .. .. .                                     | per cwt.         | 3  |  |
| " Prussiate Yellow .. .. .                                 | per lb.          | 0  |  |
| " Sulphate, 90 % (ex ship) .. .. .                         | per ton          | 9  |  |
| " Muriate, 80 % (do.) .. .. .                              | "                | 8  |  |
| Silver (metal) .. .. .                                     | per oz.          | 0  |  |
| " Nitrate .. .. .                                          | "                | 0  |  |
| Sodium (metal) .. .. .                                     | per lb.          | 0  |  |
| " Carb. (refined Soda-ash) 48 % .. .. .                    | nett per ton     | 4  |  |
| " " (Caustic Soda-ash) 48 % .. .. .                        | "                | 4  |  |
| " " (Carb. Soda-ash) 48 % .. .. .                          | "                | 4  |  |
| " " (Alkali) 58 % .. .. .                                  | "                | 3  |  |
| " " (Soda Crystals) .. .. .                                | "                | 2  |  |
| " Acetate (ex-ship) .. .. .                                | "                | 14 |  |
| " Arseniate, 45 % .. .. .                                  | "                | 15 |  |
| " Chlorate .. .. .                                         | per lb.          | 0  |  |
| " Borate (Borax) .. .. .                                   | nett, per ton    | 19 |  |
| " Bichromate .. .. .                                       | per lb.          | 0  |  |
| " Hydrate (77 % Caustic Soda) (f.o.b.) net pr. ton .. .. . | sol. net pr. ton | 9  |  |
| " " (74 % Caustic Soda) .. .. .                            | "                | 8  |  |
| " " (70 % Caustic Soda) .. .. .                            | "                | 7  |  |
| " " (60 % Caustic Soda) .. .. .                            | "                | 6  |  |
| " " (60 % Caustic Soda, cream) (f.o.b.) .. .. .            | "                | 6  |  |
| " Bicarbonate .. .. .                                      | "                | 6  |  |
| " Hyposulphite .. .. .                                     | "                | 6  |  |
| " Manganate, 25 % .. .. .                                  | "                | 5  |  |
| " Nitrate (95 % ex-ship Liverpool) .. .. .                 | per cwt.         | 0  |  |
| " Nitrite, 98 % .. .. .                                    | per ton          | 30 |  |
| " Phosphate .. .. .                                        | "                | 13 |  |
| " Silicate (glass) .. .. .                                 | per ton          | 4  |  |
| " " (liquid, 100° Tw.) .. .. .                             | "                | 3  |  |
| " Stannate, 40 % .. .. .                                   | per cwt.         | 3  |  |
| " Sulphate (Salt-cake) .. .. .                             | per ton          | 1  |  |
| " " (Glauber's Salts) .. .. .                              | "                | 1  |  |
| " Sulphide .. .. .                                         | "                | 7  |  |
| " Sulphite .. .. .                                         | "                | 3  |  |
| Strontium Hydrate, 100 % .. .. .                           | "                | 0  |  |
| Sulphocyanide Ammonium, 95 % .. .. .                       | per lb.          | 0  |  |
| " Barium, 95 % .. .. .                                     | "                | 0  |  |
| " Potassium .. .. .                                        | "                | 0  |  |
| Sulphur (Flowers) .. .. .                                  | per ton          | 6  |  |
| " (Roll Brimstone) .. .. .                                 | "                | 5  |  |
| " Brimstone: Best Quality .. .. .                          | "                | 3  |  |
| Superphosphate of Lime (26 % .. .. .                       | "                | 2  |  |
| Tallow .. .. .                                             | "                | 2  |  |
| Tin Crystals .. .. .                                       | per lb.          | 0  |  |
| " English Ingots .. .. .                                   | per ton          | 63 |  |
| Zinc (Spelter) .. .. .                                     | "                | 16 |  |
| " Chloride (solution, 100° Tw.) .. .. .                    | "                | 5  |  |



# THE CHEMICAL TRADE JOURNAL AND OIL, PAINT and COLOUR REVIEW.

Publishing Offices: 32, BLACKFRIARS STREET, MANCHESTER.

468.

SATURDAY, MAY 9, 1896.

Vol. XVIII.

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## TENDER.

### MANCHESTER CORPORATION GAS WORKS.

#### AMMONIACAL LIQUOR.

Gas Committee of the Corporation of Manchester are prepared to receive Tenders for the Purchase and Removal of the Ammoniacal Liquor to be produced at the Gaythorn, Rochdale-road, and Bradford-works during a period of one or more years, commencing at noon on the 1st June, 1896.

The Committee do not bind themselves to accept the highest or any Tender.

Tenders, addressed to the Chairman of the Gas Committee, and endorsed "Ammoniacal Liquor," must be delivered at the offices of the Gas Department, Town Hall, on or before Wednesday, the 10th of June, 1896.

Tender and further particulars may be obtained on application in writing to Mr. CHARLES NICKSON, Superintendent of the Department. A deposit of (which will be returned on receipt of the Tender) must accompany each for a Tender form.

By order of the Gas Committee,

WM. HENRY TALBOT,

11, Manchester, 7th May, 1896.

Town Clerk.

## TENDER.

### MANCHESTER CORPORATION GAS WORKS.

#### SPENT OXIDE.

Gas Committee of the Corporation of Manchester are prepared to receive Tenders for the Purchase and Removal of the Spent Oxide to be produced at their Gaythorn, Rochdale-road, and Bradford-works during a period of one, two, or three years, from the 30th June next. The Committee do not bind themselves to accept the highest or any Tender.

Tenders, addressed to the Chairman of the Gas Committee, and endorsed "Spent Oxide," must be delivered at the offices of the Gas Department, Town Hall, not later than 10 a.m. on Wednesday, the 10th June next.

Tender and further particulars may be obtained on application in writing to Mr. CHARLES NICKSON, Superintendent of the Gas Department.

By order of the Gas Committee,

WM. HENRY TALBOT,

11, Manchester, 7th May, 1896.

Town Clerk.

## ADVERTISEMENTS.

**STABLE** Glue, Senegalin, and Vegetaline, for Linen, Jute, and Woollen. Advertiser, with thorough knowledge of the nature of these Vegetable Glues wishes to enter into partnership. Very undertaking.—Apply "F," *Chemical Trade Journal* Office, Manchester.

**NIUM** or Materials containing Selenium, also Nickel and Cobalt Wanted. State particulars, and address letters to AND WILHELMY, Chemical Works, Gorlitz, Germany.

## POINTS IN THE PETROLEUM CONTROVERSY.

THE evidence that is being given before the Committee inquiring into the present state of the mineral oil industry is getting very interesting. Last week it was especially so, as no less a person than Mr. B. Redwood himself gave his testimony. If ever there was any doubt as to the necessity of inquiring into the laws, his evidence has laid it for ever. He explained at some length what petroleum was, and brought out the fact that the trade meaning and the legal meaning of the word petroleum were two different things. Is it not high time, therefore, that our legislators once more looked carefully into the working of the law? It is surely so merely that this anomaly shall be righted. At the same time it is desirable that a further careful inquiry be made, so that in the future the public may be able to get petroleum, and not have to buy naphtha at the price of petroleum. Through this strange difference in the definition of petroleum, we have for years had adulterated oil foisted on us, with the additional drawback that this adulterated product has proved itself much more dangerous than genuine petroleum, as the fire brigade statistics so clearly show.

In the foregoing and subsequent remarks we use the word petroleum in the sense usually accepted in this country, viz., a generic title for all burning oils, whether Russian or American (kerosene), except Scotch shale oil, which is rightly designated paraffin. At the same time it must be noted that since paraffin was used in this country long before American petroleum, it is a common practice for the general press to speak of all burning oil as paraffin, and, consequently, almost all lamp accidents are spoken of as being due to paraffin, when they are almost without exception due to the use of American oil. This error is of course a very convenient one for the Anglo-American Oil Company, *alias* the Standard Oil Company, *alias* the Oil Trust, *alias* the South Improvement Company (different and nominally extinct names for one and the same instrumentality that is supplying us daily with semi-naphtha as petroleum) and they will be very sorry for any committee of inquiry to dispel the confusion that exists in the mind of the public on this point. Having made this clear we are in a position to fully appreciate Mr. Redwood's evidence.

Murder will out, and so will the truth sometimes. Mr. Schweitzer, of New York, has publicly declared that the American refiners take naphtha, pure and simple, and mix it with the heavy oil that comes next to lubricating oil, and is scarcely distinguishable from the same. By so doing an oil having the same flash-point and specific gravity as genuine petroleum is prepared. This has long been known to those scientific gentlemen who have not wilfully closed their eyes to all that may not be beneficial to the Anglo-American Oil Company. We now have had it made public by experimental data and statements from the Netherlands, France,



and the United States, and it is a most unfortunate oversight that Mr. Redwood, as consulting adviser to the Corporation of the city of London—the municipal representative and guardian of the people of London—should have allowed such a glaring imposition on the good faith of the public and fraudulent attack upon their pockets to have passed unchallenged and unnamed. He states his belief that the simple exclusion of the dangerous lamps made abroad would do much to put an end to lamp explosions. Does this mean explosions, or accidents? The latter, we presume, as Mr. Redwood thinks that real explosions seldom, if ever, occur, and so cannot want preventing. Further, this witness says experience has shown that explosions may occur with oil of more than 100°F. flashpoint. This experience is doubtless culled from the two good old "chestnuts," Lord Romiley's and the "Goliath" accidents, with perhaps one other case, which we will refrain from mentioning out of respect to the recorder of the incident.

Be it noted that excluding foreign lamps of indifferent make will only "do much" to prevent accidents. How much? We assert with conviction that such a precaution would not prevent in six months as many accidents as have occurred with 100°F. flashpoint oil in six years, which may be safely stated at half-a-dozen.

Again, with regard to the exclusion of bad German lamps, why should not bad American oil be excluded at the same time. Wherefore should the profitable sale of cheap (and nasty) lamps be forbidden wholly and solely in order that the Rockefeller *coterie* and their satellites may profit by the unrestricted sale of their dangerous and dear-at-the-price lubricating oil. The lamps, though objectionable, can do little damage, unless they contain bad oil to start with. First chop down the tree and then lop off the branches. Do not climb ladders to do the latter in the belief that the tree will never again throw a shade.

But, to go further; if, as the witness suggested, the exclusion of the lamps is toned down to inspection at the port of entry, why not inspect the oil, too? Here we come to it. Instead of the "simple exclusion of the lamp," exclude neither lamp nor oil; but, simpler far, inspect them both. Send back the really defective lamps and take in the naphtha as naphtha and the petroleum as petroleum. Make the legal standard the same as the trade. Either define the percentage of naphtha that petroleum is to contain or take the existing written testimony of experts and class only as petroleum the product distilling from crude oil between 150° and 300°C. For convenience sake, check the percentage of naphtha by the Abel flash-point, though we have shown that this will not prevent completely the substitution of prepared oils. It will, however, prevent the loss of 300 out of the 365 lives a year that are lost by the use of the present "stuff" that the Government practically sanctions as safe for use as burning oil. That is the spirit of all we want, or the public safety demands, and you can put the whole summing up of the question on both sides in two nutshell. This is all we want, and this is all the Anglo-American Oil Co., *alias* &c., &c., do not want.

An attempt is now being made to divert attention to the wick as well as the lamp. If anything, we incline to the opinion that after the oil the wick and the lamp come in order of danger, owing to the quality of the former and the varying gauge of the wick tubes in the latter. But both difficulties can easily be remedied by honest co-operation between the makers, a thing which is impossible in attempting to prevent the sale of naphtha as petroleum.

At the same time the wick must not be lost sight of, as to part the wick played in prejudicing the public, and so becotting Russian petroleum when first introduced into the country, because it was as good as American oil but cheap is, perhaps, just one other point the American oil companies do not want dealt with too minutely in public.

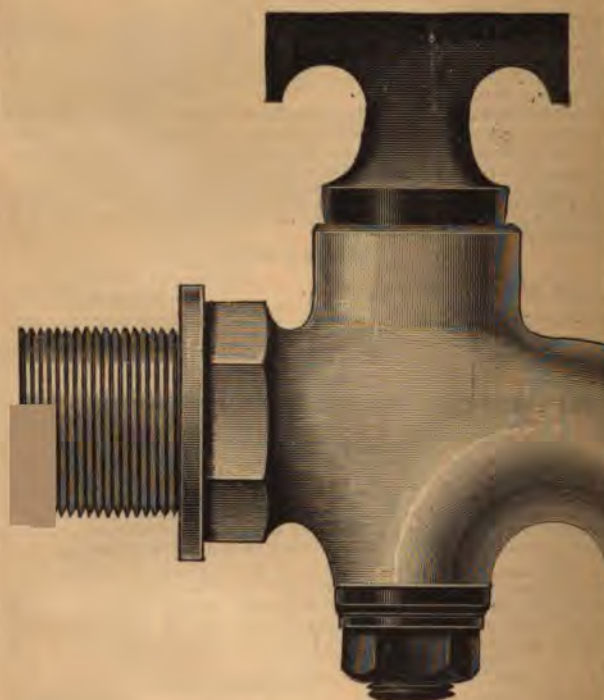
Yet weigh the rival claims; the exigencies that operate and against, and more carefully still scrutinise the motives that actuate the claimants, and then explain how it can be that England of all countries, the spontaneous testimony of the interested and honest-minded is received with sidelong glances of suspicion because it is contrary to the dictates of a millionaires, whose weapons are well known to be perjury and dollar-tainted witnesses.

### ALUMINIUM TAPS AND COCKS.

THERE have been many materials employed, and still is suggested, for the manufacture of cocks suitable for use in chemical works and those industries in which acid and corrosive fluids have to be controlled.

Hitherto most of the improvements have been confined to valve large cocks, such as are principally employed in chemical works or for purposes where extra strong tackle is necessary to withstand rough usage. The field for a cock applicable to the brewing, wine and similar trades has up to the present been practically a virgin one.

This fact has been taken advantage of by Messrs. Bennett, Sons, Shears, of 167, Kingsland-road, London, who have recently introduced



the cock illustrated in the accompanying woodcut. It is made to the lines set forth in Deaville's patent, and has been designed specifically to meet the requirements of the chemical and kindred trades.

The barrel is made of aluminium, and is fitted with a vulcanised rubber packing. This combination ensures a long life, as the wear and tear is very small. The special advantage is that while standing well a lengthy trial with various chemicals, these taps have been found to stand the action of vinegar and similar weak acids in a most satisfactory fashion. The use of aluminium presents a great advantage over the numerous well-known alloys that are now extensively used for withstanding acids, as it is of such a poisonous nature as lead, and so especially suitable for dealing with dietetic substances.



## Legal Intelligence.

### SUPREME COURT OF JUDICATURE.

#### COURT OF APPEAL.

(Before Lord Justices Esher, Smith, and Rigby.)

DEAKIN v. THE SALT UNION, LIMITED.

The litigation involved in this suit has been before the courts for some considerable time, and at one time reached the House of Lords, who sent the case back to Mr. Ridley, the official referee, for assessment of damages. The action was for breach of agreement, and Mr. Ridley found that the plaintiff was only entitled to nominal damages instead of the £50,000. claimed, and it was against this finding that the present appeal was brought. The Divisional Court, by whom the appeal was heard in the first instance, upheld Mr. Ridley's decision, but also held in regard to certain contracts made by the plaintiff prior to February, 1889, he was entitled to other than nominal damages, and against this decision both plaintiff and defendants now appealed. In delivering the judgment of himself and Lord Esher, Lord Justice Smith said that the real question for decision was whether, on the facts before Mr. Ridley, the plaintiff was entitled to £50,000, or only nominal damages. The history of the case was as follows:—In 1888 the Salt Union was formed for the purpose of obtaining a monopoly of the sale of salt and to keep up its market price. The whole of the salt works in the Cheshire district were bought, including the plaintiff's, who was paid £225,000. An agreement was then made whereby the plaintiff was appointed one of the Union's salt distributors, or dealers, and it was agreed that the price charged to the plaintiff should not be higher than the lowest price charged by the Union to any other distributors or persons. It was agreed that the plaintiff should not sell to the public at less than the list price quoted by the Union, and there was to be allowed to the plaintiff a discount of  $2\frac{1}{2}$  per cent. on all sales. It appeared, however, that some time after this agreement the Union, while quoting a price of 7s. 6d. per ton to the defendants and the 23 other distributors, entered into a contract with the Runcorn Soap and Alkali Company for the supply of salt at 5s. per ton, and the plaintiff sought to establish his claim to indemnity by saying that during this time the Salt Union had been selling plaintiff's salt at 7s. 6d. instead of 5s., and that the number of tons he had bought from the Union multiplied by the difference of 2s. 6d. worked out to a sum of £50,000, which he was entitled to recover either as damages or as money had and received. On the part of the Union it was urged that the plaintiff could not prove that he had sustained any actual damage by reason of this breach of contract, and that it was clear on plaintiff's own evidence that he had actually suffered only nominal damages. The Union said that the price of salt as authorised by them was really the market price, which at once became known to the trade, and that no distributor could possibly get a higher price from his customers. His Lordship said he must agree with the contention of the Union that only nominal damages had been sustained. The plaintiff's manager had admitted in evidence that the distributors never got any profit on the salt other than the  $2\frac{1}{2}$  per cent. discount allowed by the Union, and he asserted that the customers got to know the Union's prices in every case, and that the distributors could not possibly get any more. Upon this evidence how could it be proved, even if the defendants had sold their salt to the plaintiff at 5s. per ton, that the plaintiff could have received more than 5s. per ton from his customers. In his lordship's opinion the evidence was conclusive that he could not have done so, and, therefore, on the evidence of his own witnesses the damage was only nominal. It was further to be observed that if the plaintiff purchased and sold salt at 7s. 6d. per ton, and only received as profit the  $2\frac{1}{2}$  per cent. discount, they would actually receive more profit than if they purchased and sold the salt at 5s. per ton. For similar reasons his lordship held that the decision of the Divisional Court in favour of the plaintiff on the point of existing contracts for chemical salt must be overruled. It had been clearly shown that plaintiff had not been one farthing out of pocket by the transaction, and the result would be (Lord Esher concurring) that the appeal of the plaintiff would be dismissed, and the appeal of the defendants allowed with costs.

Lord Justice Rigby dissented. In the course of a long and elaborate judgment, his lordship said that he considered it a very useless contention to urge that plaintiff had received  $2\frac{1}{4}$ d. per ton discount and profit by being charged the higher price of 7s. 6d. per ton instead of only 1½d. per ton profit, which he would have made had he been charged only 5s. per ton. It was, in his opinion, quite unnecessary to depart from the actual facts of this case for the purpose of embarking on an inquiry of a highly speculative nature. To establish the Salt Union's position it would have to be assumed not only that the union would fix the price to the distributors at 5s., but that the Union would, or could, have prevented the plaintiff from selling it at more than 5s., and there is absolutely no evidence that this was so. He agreed with Lords Esher and Smith in the matter of the Salt Union's appeal, but dis-

agreed with them in the matter of the plaintiff's appeal, which he thought should also be allowed.

Application for a stay of execution was refused.

### HIGH COURT OF JUSTICE. CHANCERY DIVISION.

(Before Mr. Justice Stirling.)

Mr. Terrell, Q.C., moved in the case of the Lancashire Explosives Company, Limited, v. the Roburite Explosives Company, Limited, for an order to commit Sir John Stokes and other gentlemen to prison for contempt of court. The learned counsel submitted evidence on oath to the effect that the defendants had been selling large quantities of their roburite, No. 3 explosive, in infringement of the plaintiffs' patent. He also put in the evidence of Professor Dewar, and the judgment of the Court of Appeal in the recent action in support of the motion. Mr. Cripps, Q.C., submitted on very high authorities that there was no infringement, that the two explosives were different in character and appearance, and that there was no justification for the order asked for. He asked that leave should be given to cross-examine the witnesses on the evidence tendered, which after some demur was agreed to by Mr. Justice Stirling. It was understood that such cross-examination should be proceeded with immediately, the motion to stand meanwhile.

### MERSEY AND IRWELL JOINT COMMITTEE.

A MEETING of this committee was held on Monday at the offices, Mosley-street. Sir J. T. Hibbert presided. Mr. T. W. Killick moved the adoption of the report of the chief inspector, which contained the following passage with regard to the Manchester Corporation—"Since the last adjournment thirty acres of land have been brought into operation as a filtration area, but the amount of sewage which is dealt with at present by this area is only about two million gallons per day, out of a total dry weather flow of fourteen million gallons, the remainder being treated by precipitation only. The question as to what further filtration works are to be adopted is now under consideration. Practically the whole of the sewage will be connected up towards the end of the summer of this year." Mr. Killick also moved the adoption of the report of the Consulting Sub-committee. The Committee reported that the following letter had been received from the Town Clerk of Manchester—"29th April, 1896. Dear sir,—Referring to my letter, handed you this morning, I am instructed to ask that the Mersey and Irwell Committee will be good enough to grant the Corporation of Manchester a short further extension of time to enable them to consider Sir Henry Roscoe's report, and the further measures to be adopted by them." Mr. Killick said that after considering this letter and the position of the Corporation, the sub-committee recommended that a further extension of time for two months be granted them to determine whether or not they will adopt the scheme for the filtration of the sewage which had been laid before them, or what further measures would be adopted by them, and that, in the meantime, the Corporation be requested to report to the Joint Committee at the earliest date what steps they are prepared to take. He added that the committee expected that at the termination of the period stated the Manchester City Council would come to the committee with a complete scheme for the proper filtration of all their sewage. The recommendation was adopted. The Committee also presented a report with regard to the works at Mossley, Hyde, Royton, Aspull, and Glossop. In each case an extension of time was granted. The consideration of the position of the Bury Rural Council was adjourned until next month.

A report from Sir Henry Roscoe on the condition of the effluents in various districts was received and adopted. Sir Henry Roscoe, who attended the meeting, said that the effluents were in many cases unsatisfactory, but it was to be remembered that manufacturers had many difficulties to deal with. He pointed out that chemical precipitation would not answer alone, but that they must also have some land or artificial filtration.—Mr. Alderman Jenkins (Salford) said that if land filtration was needed as well as precipitation, Salford could never meet the requirements of the committee, for the reason that they would never be able to get sufficient land.—Sir H. Roscoe said he did not mean that land filtration, and that only, must be used as well as precipitation, but some means of artificial intermittent filtration was necessary besides precipitation, if they were to have a good effluent.—Mr. Alderman Noton (Oldham) said that a short time ago he went on the Irwell where it ran into the canal, and he found that it was not now the foul smelling stream that it had been.—The Chairman said that Mr. Noton's remarks were very satisfactory. It was to be remembered that the work of cleansing the rivers could not be carried out without cost, but it was a work in which the outlay was thoroughly well expended, and he hoped it would be continued. (Hear, hear.)—Mr. Alderman Hopkinson remarked that the other day he was on the canal, and found that fish came up it as far as Latchford.—Sir H. Roscoe's report was adopted. Afterwards, several manufacturers attended before the committee with regard to works deemed necessary to prevent river pollution.



## A NEW LANCASHIRE INDUSTRY.

## MAKING SILK FROM WOOD PULP.

It will shortly be started in Lancashire a new and novel industry. It will be nothing less than the manufacture of silk out of wood pulp. Quixotic as the idea seems, it has already been established, or, rather, artificial silk, can be so made; that it can be used for many purposes for which natural silk is used, and others, and that it is especially suitable for working up with natural wool, or wool, for dress material, ribands, trimmings, church vestments, &c.; that the artificial silk can scarcely be distinguished from that for which we have hitherto depended on the natural silk; and that it can be sold at prices very much lower, and still yield a substantial profit. Dress and other fabrics made from this artificial silk are, indeed, already being sold extensively in London as leading features of this season's Paris novelties; though the artificial silk is so close to that of the ordinary silks, and so little different from the new discovery, that neither the ladies who have purchased, nor, indeed, the shopkeepers who have sold them have noticed the change that has been brought about in the process of manufacture.

Now the wood-silk comes from France, large works having been established at Besançon under patents granted to Count Hilaire d'Artois, Chevalier of the Legion of Honour, who discovered the process. The first established in 1893 the fact that it might be made into a successful industry. Since then the demand for the new commodity has surpassed the existing powers of manufacture; and some of the idea was mooted of adding to the number of our own works by arranging to make the artificial silk in England as well. It seemed to be especially desirable in the interests of Lancashire commercial prosperity has been seriously threatened of it was pointed out that Lancashire weavers are much more than the French in working up those textile combinations for artificial silk is particularly, though not exclusively, adapted. A meeting of silk and cotton manufacturers met to discuss the question, and sent out to Besançon a deputation consisting of some of the most prominent of the county, an engineer, a chemist, and a lawyer, to investigate the matter thoroughly. This was done, and the outlook was found to be promising that certain concessions have been secured, and a company in process of formation, and, to begin with, a factory, at a cost of £30,000, is to be built near to Manchester for the manufacture of artificial silk yarn from wood pulp, for sale to weavers, and to be worked up by means of their existing machinery. Inasmuch as the Lancashire firms have already arranged to take the total output of the factory, even before a single brick has been laid, and as others are to be put down plant of their own to be worked on the same principle, there is evidently good reason for the expectation that Lancashire will be the eve of some important expansions in her textile trades. The prospects are the more satisfactory because the concessions have been secured specially stipulate that Continental manufacturers of artificial silk are not to send their yarn to the British market while the international patent laws will, now that the rights in Britain have been bought up, secure that henceforth neither the goods manufactured therefrom shall be imported here, though the original idea comes from France, the industry, so far as the country is concerned, will be essentially British, and will be so without fear of competition on our own shores. At the present time our imports of articles manufactured from silk are so extensive that they amounted to £15,237,000, and those of raw silk to £1,883,000, or a total of £17,120,000; but now that our national ingenuity has shown that the silkworm can be supplanted by the tree, there is thought to be a good prospect of getting a good deal of this money among our own workers instead of sending it abroad.

The process in which wood pulp can be converted into silk yarn will be described by a brief account of the process as it is already at work in Lancashire. A certain economy of labour is practised by obtaining the wood pulp in its "paper" or "cardboard" condition (though wood may also be used), and the first operation is to nitrate the wood pulp by macerating it in a solution of nitric and sulphuric acid. The acids are squeezed out by a hydraulic press, and the stuff is then washed with water in large vats. It is then partially dried and placed for some hours in a revolving cylinder containing alcohol and ether. After this it is passed through a filter, leaving looking very much like thick gum, and is put in a vat from which it is forced by pneumatic pressure into pipes leading to the spinning department. Here the machinery looks like ordinary Lancashire spinning sheds, except that one of the spindles runs along each set of machines. These pipes are fitted with small taps, fixed close together, and each tap is connected with a tube, about a 1/4 inch in diameter, at the extreme point of which is an aperture so minute that no less than ten of the filaments of human hair would be required to make up the thickness of a

human hair. These glass tubes are known as "glass silkworms," and some 12,000 of them are in use in the factory.

The effect of the pneumatic pressure in the cylinders referred to above is to force the liquid matter not only along the iron tubes, but also, when the small taps are turned on, through each of the glass silkworms, where it appears there as a scarcely perceptible globule. This a girl touches with her thumb, to which it adheres, and she draws out an almost invisible filament which she passes through the guides and on to the bobbin. Then, one by one, she takes eight, ten, or twelve other such filaments, according to the thickness of the thread to be made, and passes them through the same guides and on to the same bobbin. This done, she presses them together with her thumb and forefinger, at a certain point between the glass silkworms and the guides. Not only do they adhere, but thenceforward the filaments will continue to meet and adhere at that point, however long the machinery may be kept running. In this way the whole frame will soon be set at work, the threads not breaking until the bobbin is full, when they break automatically, while they are all of a uniform thickness. The remaining processes are the same as in the case of ordinary silk, except in two respects. In the first place, the artificial silk has to be denitrified, so as to render it non-inflammable after the chemical processes it has undergone; and, in the next place, the hanks are placed on two revolving rollers which stretch and also "iron" them, producing that high degree of lustre which is one of the chief characteristics of the artificial silk. The new product is said to take dye much more readily than the natural silk, and certainly the colours and the extreme richness of some specimens that have been on view in London seemed to leave nothing to be desired in this respect. The chief difference in appearance between the natural and the artificial silk is in the greater lustre of the latter; though it will be found also that if a single thread of each is taken the artificial will "break" differently from the natural, and has only about 80 per cent. of its strength.

The success already secured by the new process in France is such that the introduction of the industry into Lancashire is expected to produce something like a revolution in the conditions of trade there, not only by bringing into existence a new occupation, but also by finding more work for a good deal of the weaving machinery that is now only partially employed; while the wearing of "silk," or what only experts will be able to distinguish from silk, will be rendered possible in the case of a vast number of people to whom the product of the silkworm is more or less a prohibitive luxury. All the same, there will probably be some sentimental regret that the silkworm itself, which has played so important a part in the clothing of the peoples of the Western world since the middle of the sixth century, should thus run the danger of being supplanted by liquefied timber; though the discovery that clothing can be made out of wood pulp is, after all, no more remarkable than that which was made by the Persian missionaries who visited China thirteen hundred years ago, and learnt to their surprise that garments could be made from the cocoons of a caterpillar.

**PETROLEUM FATALITIES.**—Mrs. Benton, an elderly lady, living in St. Margaret's-road, Lowestoft, was burnt to death last week through the upsetting of a petroleum lamp. She retired to rest as usual, leaving the lamp burning by the bedside. A lodger was awakened by a smell of smoke coming from Mrs. Benton's room. He broke open the door, and saw the bed blazing. With assistance the flames were extinguished, and the body of Mrs. Benton, fearfully charred and almost unrecognisable, was found.—Professor Geffcken died on the evening of the 1st inst. at Munich. A petroleum lamp exploded in his room, and the eminent scholar and jurist was suffocated, apparently in his sleep, during the fire that resulted. Professor Geffcken was born at Hamburg on December 9, 1830, and studied history and law at Bonn and Göttingen.

**INTERESTING TO COLLIERY OWNERS.**—The Manchester City justices had before them on Friday, last week, a case of considerable interest under the Public Health Act. Mr. Thomas Livesey, trading as the Bradford Colliery Company, Forge-lane, Bradford, was summoned to show cause why an order should not be made to abate a nuisance caused by black smoke from a chimney on his premises. On the 8th April an observation was taken of the defendant's chimney, and it was found that in the course of half an hour there were five minutes of dense black smoke. Mr. G. Rook, who appeared in support of the application for the order, referred to a case in which it was decided by Mr. Justice Hawkins that a colliery was not exempt under the Health Act unless the suppression of the nuisance would interfere with the efficient working of the colliery. Mr. Cobbett, who represented the defendant, said that the black smoke complained of was due to extra firing, which was rendered necessary owing to the breakdown of one of the boilers on the premises. He contended that the engine power available for working the colliery provided an ample margin in case of accident, and he thought that under the circumstances of the case an order for abatement should not be made. The Bench granted the order.



## Reports of Companies.

### THE OAKBANK OIL CO., LTD.

The eleventh annual meeting of this company will be held at 200, Buchanan-street, Glasgow, on Wednesday, 13th inst., at 12 o'clock noon. In their report the directors state:—The amount at the credit of profit and loss account, including the sum of £2,089. 19s. 6d. brought forward from last year, is £10,768. 18s. 8d., which the directors recommend should be disposed of as follows:—£3,375 in payment of a dividend (free of income tax) at the rate of 5 per cent. on the paid up capital of the company; £5,000. to defray cost of renewals, &c.; £1,000. to be added to the works insurance reserve fund, and £1,393. 18s. 8d. balance to be carried forward. It has been customary formerly to pay the dividend in two portions, but the directors recommend that it be paid in full on 28th May, 1896, on this occasion.

A contract has been entered into for the supply to this company for a period of years of the whole of the crude oil made by the Dalmeny Oil Company, Limited. In order to render the refinery adequate to deal with the increased quantity of crude oil, the directors acquired the right, on favourable terms, to adopt the "Henderson" system of continuous distillation, and are now applying that system throughout. The cost of doing this and other necessary renewals and reconstructions in connection therewith is estimated to amount to £5,000., of which sum £3,454. 6s. 8d. has already been expended.

In continuance of the policy inaugurated in 1894 the directors have added the sum of £1,221. 7s. 8d. to retorts renewal fund.

A disastrous fire occurred on 29th July last at the pit, which destroyed the pithead frame and scaffoldings, totally wrecked the shaft, and set the underground workings on fire. The underground fire was extinguished, the shaft repaired, and the pithead frame and scaffoldings restored as quickly as possible, but the full effects of the disaster were not overcome till the end of September. In the meantime the retorts were kept in full work with shale from Bing and purchased from other companies. The directors express their indebtedness to the kindly assistance rendered at the time by the Pumpherstone Oil Company, Limited. In addition to the sum recovered from the insurance companies, and the sum of £356. 15s. 8d. charged to works insurance fund, the loss, in consequence, was at least £2,500.

While there has been a considerable increase in the value of the liquid products of the company, the value of the solid products suffered a heavy fall, and the average price realised for the company's products generally is lower as compared with previous years. Yet the better refining facilities and the greater quantity refined have enabled the costs to be reduced to such an extent as to more than compensate for the lower values.

Combinations were entered into at the beginning of the year for the better regulation of the sale of the oil companies' products—one between the Scotch and American producers, relating to solid paraffin, fell through, and is not likely to be renewed; and one between the Scotch producers only relating to burning oils, was maintained with satisfactory results, and its renewal is now the subject of negotiation.

The directors regard the result of the year's working with satisfaction. The outlook for the next year is uncertain. With low costs, however, and prudent co-operation among the oil companies, a dividend may be earned.

The stocks on hand and in process have, as usual, been valued at the minimum prices.

### MASON AND BARRY, LTD.

The annual general meeting of this company will be held on Monday, 11th inst., at the Terminus Hotel, Cannon-street, at 2 p.m. The report of the directors states:—

The total quantity of ore broken and raised at the mine during the year 1895 was 185,463 tons, as against 196,922 tons in 1894, and the shipments during the same period (inclusive of ore from the Cementation Works) amounted to 186,368 tons, as against 242,386 tons in the previous year. The quantity of ore sold and invoiced for its sulphur value during 1895 amounted to 189,448 tons, as against 233,729 tons in 1894.

The average price of G. M. copper (including Chili bars) during 1895 was £42. 16s., as against £40. 4s. 6d. in 1894, £43. 16s. in 1893, and £45. 14s. in 1892.

After writing off in the Mine Books for depreciation of works, plant, etc., the sum of £15,018., and allowing for the variation in the estimated value of the stocks on hand in this country, on the continent, and in Portugal on the 31st December, 1895, and after deducting management expenses and Income Tax, the nett profits on working account have amounted to the sum of £16,155. 13s. to which has to be added the sum of £8,177. 7s. 5d. received as dividend on La Sabina shares, and the sum of £3,587. 6s. 8d. from sundries, making together a total profit for the year of £27,920. 7s. 1d.

The stocks of ore and copper precipitate broken, raised, and on hand, 31st December, 1895 (exclusive of the stocks at the Wallsend Works), are valued at £292,971. Compared with the two previous years, the figures stand as follows:—

|                                                                                                    | 1893.    | 1894.    | 1895.    |
|----------------------------------------------------------------------------------------------------|----------|----------|----------|
| Estimated value of stocks in England (exclusive of stocks at Wallsend Works, and on the Continent, | £28,391  | £51,849  | £46,117  |
| Estimated value of stocks in Portugal:                                                             |          |          |          |
| Balance of cost of ore at Cementation Works .. ..                                                  | 312,250  | 254,637  | 209,316  |
| Ore ready for shipment .. ..                                                                       | 6,564    | 13,407   | 18,848   |
| Copper precipitate .. ..                                                                           | 39,265   | 27,450   | 18,690   |
|                                                                                                    | £386,470 | £347,343 | £292,971 |

The stocks at the Wallsend Works are shown by the balance sheet as valued at £1,466. on the 31st December last, as against £3,691. on 31st December, 1894.

The mine assets in Portugal (after writing off for depreciation) stood at 31st December, 1895, at £456,907. These assets embrace the following items, and compare with the preceding two years as under:—

|                                                       | 1893.    | 1894.    | 1895.    |
|-------------------------------------------------------|----------|----------|----------|
| Works, buildings, land, plant, &c.                    | £103,926 | £94,942  | £84,843  |
| Railways, shipping piers, tug boats, &c. .. ..        | 73,838   | 74,691   | 72,082   |
|                                                       | 177,764  | 169,633  | 156,925  |
| Mine stores and cash assets .. ..                     | 53,381   | 50,148   | 53,128   |
| Stocks of ore and copper precipitate (as above) .. .. | 358,079  | 295,494  | 246,854  |
|                                                       | £589,224 | £515,275 | £456,907 |

As shown by the profit and loss account, the profit realised on the year's working amounts to £27,920. 7s. 1d., to which has to be added the balance, £3,651. 5s., brought forward from the year 1894, making together the sum of £31,571. 12s. 1d., less sundries, £346. 8s., and the directors having written the sum of £4,500. off La Sabina shares, there remains a balance for appropriation of £26,725. 4s. 1d. From this balance the directors recommend the payment of a dividend of 2s. 6d. per share, and to carry forward the sum of £3,578. 14s. 1d. to the next account.

The Company's claim against the assets of La Société Industrielle et Commerciale des Métaux is still undecided by the French Court.

In accordance with the company's articles of association, Mr. F. T. Barry, M.P., and Mr. H. E. Beddington will now retire from the Board, but, being eligible, they offer themselves for re-election, and the directors recommend that they be returned to the Board. The auditors are likewise subject to re-appointment.

As notified by advertisement, the general meeting will be followed by an extraordinary general meeting called for the purpose of considering, and if approved, passing, the following resolution:—"That the capital of the company be reduced from £840,000., divided into 210,000 shares of £4. each, to £630,000, divided into 210,000 shares of £3. each, and that such reduction be effected by returning to the holders of the shares that have been issued, and to the parties entitled to have fully paid shares issued to them, paid up capital to the extent of one pound per share, and by reducing the nominal amount of all the shares from four pounds to three pounds."

### THE BORAX COMPANY LTD.

The ordinary general meeting of shareholders of the Borax Company, Limited, was held on Friday 1st inst. at Winchester House, Old Broad-street, E.C., the Hon. H. A. Lawrence presiding.—In moving the adoption of the report, the Chairman stated that although the profits earned during the year showed a sensible increase as compared with the previous year, the directors regretted to say that they were far from being satisfactory. Competition had grown to such an extent, notwithstanding the low prices ruling, that the directors could not hold out any hopes of an immediate improvement in the company's position. Further important economies had been effected in the cost of production of the ore and the manufactured products of the ore, and all possible means were being employed to increase the outlet for the company's goods. The directors believed that if they could further increase the trade they would still further decrease the cost of production. The question of increasing the sales had received the careful attention of his colleagues and himself, and they had just organised a scheme for making their articles better known.—Sir W. G. Hunter seconded the motion which was carried.



## DIVIDENDS.

*er-Partington Paper Pulp Co., Ltd.*—At the last meeting of the it was decided to pay an interim dividend for the half year arch 31st of 4 per cent. (8 per cent. per annum), free of income

*ool Nitrate Co., Ltd.*—The directors have declared a dividend cent., payable May 15th. Transfer books closed until that date.

*Dynamite Trust Co., Ltd.*—The directors recommend a of 13 per cent.

## Trade Notes.

**TE STATISTICS.**—The Permanent Nitrate Committee's public l circular for May states:—"Nitrate of soda: Total exports to April, 400,000 quintals; loading for Europe, May 1, 1,146,000 ; imports, Europe, April, 70,120 tons; deliveries, Europe, 15,150 tons. Visible supply, Europe, May 1: Stocks and 11,870 tons."

**SION IN A COAL BUNKER.**—A fatal accident occurred at ntly on board the Duke of Leuchtenberg's yacht *Sarnitz*, lying in the harbour. Five of the crew opened the coal and descended with a lighted lamp. An explosion immediately . One of the crew, named Brukassoff, was enveloped in d severely burnt. He was at once taken to the hospital, and rtly after his admission. Another man, named Kadrine, who seriously burnt, and a third, who was only slightly injured, ended to on board the yacht. The two other men escaped

**SHIPMENTS TO THE EAST INDIES.**—Messrs. Thomas Higgin in their monthly circular, report regarding the shipments of e East Indies that the clearances from Liverpool for Calcutta, try to 30th April, were 42,434 tons, the total from other ports 1,943—a total of 55,377 tons. This compares with the clear- m Liverpool for the same period in 1895 of 51,503 tons. The s from Liverpool for other ports, 1st January to 30th April, 90 tons. The probable clearances during May make a total 9 tons.

**TE SHIPMENTS.**—The Permanent Nitrate Committee has the following official telegram from Iquique:—"20,300,000 remain for export to all parts for the twelve months ending t next. Directorate cannot increase until prices pass 6s., in se will only increase the shipments according to requirements nption." In the terms of the nitrate combination agreement, ase of exports must be decided upon not later than the 30th of er.

**GASOLINE EXPLOSION.**—A fatal explosion of gasoline this week in the basement of a building in the heart of ti, U.S.A. The premises were wrecked, and six persons were d 18 injured. Many more, it is feared, are buried in the This playful product is refined from the naphtha that is so y introduced into the "export oil," concocted for the benefit h and other European consumers of "petroleum." Even in volatile form it has fully sustained its reputation for in- lity, though not in quite such a wholesale fashion.

**US FUEL.**—We notice that Messrs. W. F. Mason, Limited, of it, Manchester, are doing well with the Duff Patent Gas Pro- hich seems to be largely supplanting the older forms. They ave over 200 of the Duff Producers at work, and are getting mportant repeat orders from firms who have partially adopted m. Apart from the glass, steel, and pottery trades, they are welcome in many branches of the chemical trade. We are understand that the old Siemen's pattern can be readily con- the Duff system, the advantages of converting being quickly d by the increased yield of gas, and the complete obviation of ouble some task of clinkering, with its attendant waste of fuel nditure for labour.

**lary.**—One of the most familiar figures in the chemical tra- Manchester district has passed over to the majority in *Mr. Beck*, whose death took place at his residence, Ashton Old- enshaw, on the 28th ult., in his ninety-first year. Mr. Beck nally a wheelwright and smith at Openshaw, and it was his at he never slept a single night outside the borders of that . He stood "under the clock," as it is termed, in Fountai- over 30 years as a representative of Farmer's firm at Gorton, ut in an appearance up to four or five weeks ago. The funeral e at Ardwick Cemetery on Monday last, and was of a private .—*Colonel North*, of nitrate fame, died suddenly at a meeting gunas Nitrate Company, on Tuesday. The lamentable occur- used considerable excitement and subsequent depression in circles and in the City.

**"GASSING" FATALITY AT WIDNES.**—What might have been another very serious accident was partially averted this week at Pilkington's Works, Widnes. Two men, named John Isherwood and Charles Lynch, were working in the carbonating room when an escape of sulphuretted hydrogen occurred, and they were overcome. Richard Dutton, fireman, went to their assistance, and he also was overcome. Eventually the men were got into the fresh air. Artificial respiration was applied, and Dutton and Lynch were restored, but Isherwood died in about two hours. A steeplejack who was repairing the chimney at the same works also died this week from injuries sustained by the breaking of the rope which was supporting him at an elevation of about 90 feet.

**THE ADULTERATION OF BURNING OIL.**—According to the state- ment made by Mr. H. Schweitzer, of New York, some of the refiners of American petroleum have a way of adulterating their product. This consists in making up oil from a mixture of "tops and bottoms" —i.e., naphtha and the last boiling, or heavy oil. It is stated that these mixtures can be made to show the same flash-point and specific gravity as the best burning oils; and as the boiling point is also the same, only an exact fractional distillation would furnish means for detecting the adulteration. For this purpose, Mr. Schweitzer advises the use of the solidifying test generally, which also shows the amount of solid paraffins present in the oil. Upon this, Herr R. Kissling re- marks that he has used the solidifying tests daily for at least 20 years, not because of its supposed value as a test of the burning and illu- minating power of the oil, but because the separating out of the paraffins in cold weather might give rise to great inconvenience. For applying the test, Mr. Kissling makes use of an appliance consisting of a couple of concentric tin cylinders, containing a mixture of ice and salt. Into this, standing upon a cork plug, is inserted the oil in a glass tube which also contains a thermometer. According to Mr. Schweitzer, one of the large American railway companies demands that oil flashing at 150° to 175° shall remain clear when cooled and kept for 10 minutes at 1° Fahr.: and 300° oil must remain clear when cooled to 32° Fahr.

**SEA CARRIAGE OF PETROLEUM.**—For many years shipowners have declined to carry petroleum as cargo unless it has been guaranteed by the shippers as complying with the condition imposed by the Petroleum Acts—namely, that it would not give off an inflammable vapour at a temperature of less than 73° Fahrenheit. The inquiry proceeding by a Select Committee of the House of Commons has, however, suggested the necessity of some declaration making it clear that, when petroleum is about to be shipped as part of a general cargo, responsibility for compliance with this condition of the Acts of Parliament rests solely with the shipper. The committee of the London Direct Short Sea Traders' Association, under the presidency of Mr. R. Cattarns, have therefore formulated the following petroleum resolution clause, which will henceforth form part of their authorised Bill of lading for over-sea purposes, and also be inserted in the way bills used in the coasting trade:—"The shipowners refuse to carry petroleum which gives off an inflammable vapour at a temperature of less than 73° of Fahrenheit's thermometer. Shippers will be held to guarantee the petroleum they ship will not give off an inflammable vapour under any circumstances at a temperature of less than 73° of Fahrenheit's thermometer, and the consignees of the goods will be held responsible for all the consequences and legal penalties attaching under the Petroleum Act of Great Britain or elsewhere in the event of their shipping petroleum of a nature such as that above specified. Clause 12 of the authorised form of Con- tinentall Bill of lading shall apply to this shipment."

## Market Reports.

## TAR AND AMMONIA PRODUCTS.

Benzols are about the same, 90's being quoted 1s. 11d. to 2s. for prompt. July-December 1s 10d. For 50 90's the present quotation is 1s. 8d. There is no change in crude carbolic acid, 60% standing at 2s. 1d., but 40% crystals are a fraction lower at 7d. Crude naphtha and solvent are still quoted 8d. and 1s. 3d. respectively. Pitch is easy at 32s 6d., f.o.b. East Coast. Anthracene and creosote unaltered.

The spurt in sulphate of ammonia is not very well sustained. It has undoubtedly been a relief, but for prompt buyers can again only be induced to operate at a reduction. London outside makes £8. 2s. 6d., Liverpool £8. 2s. 6d., Hull £8, and Leith £8. 1s. 3d. to £8, forward. Beckton £8. 10s.

## MISCELLANEOUS CHEMICAL MARKET.

The market generally for alkalis is unchanged, and there is a fairly good demand for the staple products for export. Bleaching powder is offered at rather easier rates for the States, and £7. to £7. 2s. 6d. per ton is about the nearest spot quotation for hardwoods, f.o.b. Liverpool, and £6. 17s. 6d. f.o.r. makers' works. Caustic soda



is in fairly steady request, and prices are unchanged, viz., f.o.b. Liverpool, 77%, £9. 7s. 6d. per ton; 74%, £8. 7s. 6d.; 70%, £7. 7s. 6d. per ton; 60%, £6. 7s. 6d. nett., 10 ton lots and upwards. Ammonia alkali, 58%, £3. 7s. 6d. per ton, bags, f.o.r. Soda crystals 35s. per ton, bags. In chlorate of potash there is a fair business doing at 4½d.; soda slightly easier at 6½d. to 6¾d. Salteake firmer in price, and in better inquiry at 22s. 6d. per ton, f.o.r. Recovered sulphur £3. 12s. 6d. per ton. Sulphate of copper has further improved in price at £18. 15s. to £19. per ton, f.o.b., according to brand. Yellow prussiate of potash weak at 7¼d., London make 7d. per lb.; prussiate of soda 6½d. Potash, caustic and carbonate, continue in fairly good demand, and prices are strong—90/92% carbonate at £17., and caustic, 90%, £24. 10s. nett., c.i.f. White sugar of lead steady at £22., c.i.f.; brown £14. 15s., and grey £19. per ton. Acetate of lime—brown £4. 5s. per ton, but no business doing; grey £7. per ton. Acetate of soda in fair request at £14. 10s., c.i.f. Acetic acid unchanged in price, and in moderate demand. For white powdered arsenic there is still a strong inquiry, and prices firm at £22. to £22. 10s. Arseniates higher in price. Nitrate of soda steady at 7s. 10½d. to 8s. Ammonia salts, generally, firm. Sulphocyanides in good request, but no movement in price. For borax price is maintained by the syndicate at £19. 10s., crystals. Aniline oil and salt quiet, but no change in value. Green copperas in much better demand, and price firmer, owing to scarcity of supply. Reports do not indicate any general improvement as yet in the demand for chemicals.

### REPORT ON MANURE MATERIAL.

There has been no special feature in the market to comment upon. There continues to be a fair demand, but any change in prices is in favour of the buyers. Further business in 75/80% Florida rock is reported at 6¼d. to the Baltic, and to the North Sea at 6d. per unit, summer shipment. A fraction under 6d. per unit would do c.i.f. to good U.K. ports. The position of South Carolina rock is unchanged. There is nothing fresh in River Plate bones, sellers' and buyers' ideas of value for shipment being still rather widely divergent. Bombay bone meal for shipment offers at £3. 12s. 6d. per ton, and this price would no doubt be accepted for parcels near at hand. On spot, £3. 15s. per ton is asked. Nothing doing in crushed East Indian bones. Nitrate of soda remains steady at 7s. 10½d. per cwt. for ordinary quality, and 8s. for fine quality on spot. Due cargoes are worth about 7s. 10½d. per cwt., ordinary quality. Home-prepared dried blood is more inquired for, and 7s. 6d. per unit is again asked.

### LIVERPOOL MINERAL MARKET.

The mineral market still continues tolerably brisk. Manganese: There are no further arrivals to report; stocks being small, prices have still further advanced. Ground manganese: The demand is good, and prices show an improvement, £6. 10s., £8. 10s., £10. 10s., and £16. asking, according to grade. Manganiferous iron ore: There are no arrivals to report this week, but prices are firm at last quotations. Chrome recontinues in demand at current prices. Bauxite: The demand continues good at 20s. 9d. for firsts, 16s. for seconds, and 12s. for third quality, f.o.b. French chalk: All arrivals have gone into consumption, and for the better grades prices have advanced; "Angel White" qualities meet with a strong demand at 65s. to 70s., 80s. to 90s., and 100s. to 110s. per ton, according to grade. Wolfram and scheelite: There are no stocks, and prices are slightly advancing. Ferro-tungsten and ferro-chromium are in fair demand at unchanged prices. Arsenic: This article continues scarce; £22. 10s. to £25. per ton is asked, according to quantity. Fuller's earth remains steady at 50s. for lump, 55s. for ground, and 75s. per ton for impalpable powder, "Emerald," and other brands. Ochres and umbers: A steady business is done in these articles at 60s. to 65s. per ton for J.C. ochre, and 40s. to 45s. per ton for umber. Antifriction ore: There is no change to report, the demand being quiet at unchanged figures. Pumicestone is in quiet demand, prime Teneriffe lump being done at £7. 10s. per ton, and Italian at £10. 10s., with ground at £6. Kieselguhr continues in fair demand at unchanged prices. Asbestos and mica continue to be inquired for, and a quiet business is done at unchanged prices. Bog ore continues in quiet demand at 22s. 6d. per ton. Magnesite sells slowly. Plumbago: The demand continues good, especially for foundries' qualities, which are done at £6. to £10. per ton, according to grade, prime Ceylon being done at £15. to £20. per ton. Carbonate and sulphate of barytes continue quiet, without change. Fluorspar meets with a fair demand. Feldspar is quiet. Molybdenite is in fair demand, but cerite, euxenite, orthite, ytterite, etc., continue quiet.

### LIVERPOOL OIL AND COLOUR MARKET.

WEDNESDAY.

OILS.—Palm oil, though dull in tone, is moving fairly well, and spot sales of Lagos have been made at £18. 15s. to £18. 12s. 6d.,

while for forward May-August £18s. 10s. has been done. Olive is in good request, though prices are very firm, and have hardened for better qualities. Candia is offering at £31. 10s. per tun, Malaga at £30., and Seville at £29. 10s. Linseed is rather easier as compared with last week, but closes firm at 19s. 6d. to 20s. 6d. per cwt., for Liverpool makes, in export casks. Cottonseed has fallen in value, and is dull even at the decline: Liverpool refined is quoted 16s. 9d. to 17s. 3d. per cwt. Castor oil is without change for spot business, there being practically nothing else doing; good seconds Calcutta range from 23½d. to 24½d., and first pressure French 2¼d. to 2½d. per lb. There is nothing to report in tallow. With resin the demand continues satisfactory for lower grades, but for fine is very indifferent; there are no changes in values. Spirits of turpentine continue steady, the scarcity keeping the price firm at 22s. 6d. per cwt. Petroleum slow of sale, at 6¼d. to 7¼d. per gallon for American, and 5¾d. per gallon for Russian refined.

COLOURS.—Prices are steady, and practically without change. Ochres: Oxfordshire, common, £10., medium, £12., best, £15. Derbyshire, common, 40s.; medium, 50s.; best, 60s.; Welsh, best, 90s., seconds, 50s., and common, 18s.; Irish, Devonshire, 40s. to 45s.; French, J.C., 65s. Umber: 40s. to 45s. White lead, £16. Red lead unchanged. Venetian red, £6. to £10. Cobalt: Prepared oxide, 9s. 9d.; black, 9s.; blue, 6s. Oxide of iron: Common, £7.; medium, £10.; finest, £20. Zinc oxide, £22. 10s. to £25.

### THE METAL MARKETS.

LONDON, WEDNESDAY.—Pig iron, easy: Scotch warrants closed at 46s. 0½d.; Middlesbrough, 37s. 5½d. cash, and hematite, 46s. 4½d. Copper, steady: Chili bars, G. O. B.'s and G. M. B.'s, closed at £45. 8s. 9d. to £45. 13s. 9d. cash, and £45. 15s. to £46. three months. Tin, quiet: Straits closed at £59. 17s. 6d. to £60. 7s. 6d. cash, and £60. 10s. to £61. three months; Australian, £61. 5s. English ingots, £63. 10s. to £63. 15s. Lead: Spanish, £11. 1s. 3d. to £11. 2s. 6d.; English, £11. 15s.; Silesian spelter, ordinary, £16. 15s. Nickel, 1s. 2½d. Antimony, £30. 5s. to £30. 10s. Quicksilver, dull: first hands, £6. 15s.; second hands, £6. 13s. 6d. Copper shares, steady: Cape, 2½ to 2½; Copiapo, 2 to 2¼; Libiola, 2¼ to 3; Mason and Barry, 3½ to 3½; Rio Tinto, 20½ to 21½; Tharsis, 5½ to 5½.

GLASGOW, WEDNESDAY.—Market firmer, with small business. Scotch done at 46s. 0½d., 46s. 1d., and 46s. 0½d. cash, also at 46s. 2½d. one month; closing with buyers at 46s. 0½d. cash, sellers ask 46s. 1d. Cleveland done at 37s. 7d. one month; closing with buyers at 37s. 5½d. cash, sellers ask 37s. 6d. Cumberland hematite closes with buyers at 47s. 4½d. cash, sellers ask 47s. 6d. Middlesbrough hematite closes with buyers at 44s. 10½d. cash, sellers ask 45s.

### TYNE CHEMICAL REPORT.

TUESDAY.

Chemicals continue quiet, with little or no change in the volume of business doing. Soda crystals are quoted at £2. 2s. 6d. per ton, gross weight, locally. Sulphur, £3. 17s. 6d. per ton. Caustic, 76/77%, £9. 5s. per ton; 70%, £7. 10s. to £7. 15s. per ton. Other prices as under:—

Bleaching powder, softs, £7. 5s. per ton, nett; hard, £7. 10s. per ton, nett; caustic soda, 76/77%, £9. 5s. per ton, nett; do., 70%, £7. 15s. per ton, nett; recovered sulphur, 2 cwt. bags, £3. 17s. 6d. per ton, nett; soda ash, 48%, £4. per ton, nett; do., 50%, £4. 3s. 4d. per ton, nett; do., 52%, £4. 6s. 8d. per ton, nett; alkali, 36%, £2. 15s. per ton, nett; white alkali, 48%, £4. 10s. per ton, nett; do., 50%, £4. 15s. per ton, nett; do., 52%, £5. per ton, nett; hyposulphite of soda, 5-7 cwt. casks, £6. 5s. per ton, nett; do., 1 cwt. kegs, £7. per ton, nett; silicate of soda, 75° Tw., £2. 12s. 6d. per ton, nett; do., 100° Tw., £3. per ton, nett; do., 140° Tw., £3. 7s. 6d. per ton, nett; soda crystals, casks, £2. 2s. 6d. per ton, gross weight; do., 2 cwt. bags, £2. 2s. 6d. per ton, nett weight; chlorate of potash, 5d. per lb., less 6%; pearl hardening, £3. per ton, nett; pure white sulphate of alumina, £3. 17s. 6d. per ton, nett; blanc fixe, £7. 5s. per ton, nett; chloride of barium, refined crystals, £6. 15s., per ton, nett; do., 90/95%, crude calcined, £6. per ton, nett; sulphide of barium, crystals, £4. 15s. per ton, nett; carbonate of alumina, £30. per ton, nett; aluminate of soda, £30. per ton, nett.

SALT.—There is no change in South Durham salt, which is quoted at 9s. per ton, f.o.b. Tees. There is a good demand.

COALS.—There is practically no alteration to report in the market. Steam coals are in rather better demand. Coke continues in good request, with increased shipments. Best Northumbrian steam, 8s. 3d. to 8s. 6d. per ton; second qualities, 7s. 3d. to 7s. 6d. per ton; small steam 3s. 9d. to 4s. per ton; household coals, dull, 10s. per ton; gas coals, 6s. 6d. to 6s. 9d. per ton; coke, firm, 15s. to 15s. 6d. per ton.



## WEST OF SCOTLAND CHEMICALS.

GLASGOW, TUESDAY.

a number of the possible buyers of sulphate of ammonia are from purchases, as if the belief that the recovery is evanescent article has steadily mended, and at the close of the week 8. 5s. prompt, f.o.b. Leith, which is also the figure to-day, not much doing, however, and the views of Continental agents are in opposition to anything like a permanent recovery anytime. A lot was sold forward (July and August delivery), s. per ton, but makers generally look for more than that. Chemicals continue on a rather quiet market, with no changes.

The export traffic proceeds, but new business scarcely comes in a way to satisfy makers. The annual financial declarations of mineral oil companies have begun, and, so far, show better. At least two of the concerns, for the past year or two unprofitable, will be found this year with fair sums for division. To the good burning oil are due these improved results. It is hoped that prices will be capable of being maintained.

prices current are:—Soda crystals, £2. 2s. 6d., nett, Tyne; 48/56°, £3. 15s. to £4. 15s. nett, Tyne; white alkali, 4. 10s. to £5. nett, Tyne; alum in lump, £5. to £5. 5s. nett; caustic soda, white, 74° £8. 7s. 6d., 70/72° £7. 7s. 6d., 60/62° £1. and cream 60/62° £6. 7s. 6d., all nett, Liverpool; bleaching £7. nett, Tyne; saltcake, 23s.; borax, English, £20., and boracic acid, £30. nett, Glasgow; bicarbonate of soda, £6. 10s., and 1-cwt. casks £6. 15s. nett, Liverpool; potash, 4½d. nett, for Scotch and English deliveries (for ½d. nett, f.o.b. Glasgow); bichromate of soda, 3¾d. nett, for English deliveries (for export, 3½d. nett, f.o.b. Glasgow); potash, 5d. less 5%, Liverpool; nitrate of soda, 8s. to sulphate of ammonia, £8. 5s. prompt, f.o.b. Leith; niac, first and second white, £39. and £37. nett, any port; of copper, £18. less 5%, Liverpool; paraffin scale, hard, 1¾d., and soft, 1¾d. to 2d. per lb.; paraffin wax, 120° red, 2¾d. to 2½d. per lb.; paraffin spirit (naphtha), 7d. per gallon; paraffin oil (burning) No. 1, 6½d., and crystal, 6¾d., at works, for buyers (English sales ½d. to 1d. lower); ditto (lubricating) £5., 885° £5. 10s. to £6., and 890/895° £6. to £6. 10s. Exports of sugar at Greenock were nil.

## L. PAINT, OIL, AND COLOUR REPORT.

TUESDAY.

—The demand for oils is well maintained, and there is also a movement in price of linseed oil; and cotton oil, which has the easier, is again about the same prices. The stocks of seed oil, ending April 30th, were—Linseed, 3,064 quarters; against 12,237 ending March. Cottonseed, B., 173 tons; against 440 tons March. Cottonseed, W., 682 tons; against 699 tons ending March. The imports during the month have been—Linseed, 67,075 against March, 76,849 quarters. Rapeseed, 11,907 quarters; against March, 14,141 quarters. Cotton, 10,080 tons; against 11,620 tons. Oil on the spot has improved 5s. per ton, closing firm at 17s. naked; May-August and September-December, 18s. 4½d., boiled and refined, £1. to £2. per ton extra. Export for the month been 1,580 cwt. Refined cotton oil, after being easy, closes spot 14s. 7½d., naked; and May-August offering at 15s. 1½d. with 13s. 4½d., naked, spot; casks, £1. and ordinary barrels on extra. Export of refined, 6,800 cwt. Olive oil unrefined, Turpentine, 21s. 3d. per cwt. Castor oil, 2½d. per lb. for pure. Cod oils, £17. to £20. per ton. American cotton oil 6, fatty acids, £11. per ton in barrels. Margarine steady trade; kegs, 34s. to 35s. American lard in pails, demand slow, 27s. 6d. per cwt.

S.—In quiet demand. Linseed cakes, 95% pure, £5. 17s. per ton; Americans, £5. 2s. 6d. Russians, £5. 15s.; 5, £5. Cotton cakes, best makes, £3. 17s. 6d.; second 53. 12s. 6d. to £3. 15s. Rape cakes unchanged.

PAINTS.—The demand continues good and the situation unchanged. White and red leads unchanged; oxide of iron, venetian red, yellow ochre, black, blue, green, &c., ground in oil, from £11. per ton. Ready-mixed paints, from £24 per ton, in 1, 2, 4, and 7lb. lever tins; paint remover, 25s. to 30s. per cwt.; imperial black varnish in good demand, £5. 10s. per ton in barrels; oak varnish from 5s. 6d. per gallon.

## New Companies.

"Wood Pulp," Ltd.—CAPITAL, £2,000, in shares of £10. each. This company has been formed to acquire the goodwill of the trade, paper known as "Wood Pulp."

Isaac Holden and Sons, Ltd.—CAPITAL, £517,200., in £100. shares. This company has been formed to acquire and take over as a going concern the business now carried on at Bradford, Yorkshire, by Messrs. Isaac Holden and Sons, of woolcombers, grease extractors, and soap manufacturers. The subscribers to the memorandum of association are:—I. Holden, Bart., Oakworth House, near Keighley; A. Holden, Bolton Percy, Yorkshire, woolcomber; E. Holden, Park-avenue, Southport, woolcomber; T. Craig, Alston Lodge, Bradford, woolcomber; E. I. Holden, Bolton Percy, Yorkshire, woolcomber; I. H. Holden, Park-avenue, Southport, woolcomber; J. H. Roper, Alston Lodge, Bradford, manager.

Pioneer Petroleum Syndicate, Ltd.—CAPITAL, £50,000., in £1. shares. This company has been formed to acquire and work oil wells, refineries, and mines, and to deal in and distribute petroleum and petroleum products. The subscribers to the memorandum of association are:—G. F. Adams, 18, Aubert Park, Highbury, clerk; T. B. Catchpool, 105, Hanley-road, Stroud Green, clerk; F. Vickers, 97, Dagnall Park, South Norwood, clerk; C. R. Smith, 19, Dayton Grove, Peckham, clerk; H. F. Adams, 10, Brook-road, Holloway, cashier; T. T. Curtis, 17, Beulah-road East, Thornton Heath, cashier; W. B. Woosnam, 23, Ada-road, Camberwell, clerk.

Thomas Younie and Co., Ltd.—CAPITAL, £20,000., in £1. shares. This company has been formed to acquire and carry on the oil, plant, and colour manufacturing business of T. Younie, of Newcastle-on-Tyne. The subscribers to the memorandum of association are:—T. Younie, 42, Grosvenor-road, Newcastle, manufacturer; E. M. Watson, 40, Fern-avenue, Jesmond, Newcastle, clerk; R. Young, College-street, Newcastle, secretary; J. Moffatt, Hetton-le-Hole, Durham, veterinary surgeon; A. Lee, Seaton Delaval Colliery, Northumberland, overman; F. G. Lundi, 31, Westgate-road, Newcastle, solicitor; F. Wright, 28, St. Edmund's-road, Gateshead, clerk.

Dufftown Auction Co., Ltd.—CAPITAL, £1,000., in £1. shares. This company has been formed to trade as salesmen and agents for agricultural produce, feeding stuffs, fertilizers, chemicals, implements, &c.

Scottish Cyanide Co., Ltd.—CAPITAL, £200,000. in £10. shares. This company has been formed to carry on the business of cyanide and ferrocyanide manufacturers and dealers, in the United Kingdom. The subscribers to the memorandum of association are:—J. B. Readman, 4, Lindsay-place, Edinburgh, analytical chemist; G. H. Gemmell, 4, Lindsay-place, Edinburgh, analytical chemist; C. M. King, 115, Wellington-place, Glasgow, merchant; T. Aitken, 5, Grosvenor Crescent, Edinburgh, shipowner; G. Readman, 10, Damanary-street, Edinburgh, advocate; W. A. Robertson, 48, West Nile-street, Glasgow, merchant; W. Sanderson, Talbot House, Leith, distiller; Wm. Blair, L.L.B., 28, Charlotte-square, Edinburgh.

## Gazette Notices.

## PARTNERSHIPS DISSOLVED.

M. ARCULUS, J. WARRY, and G. N. ARCULUS, glass manufacturers, Birmingham, under the style of Alfred Arculus and Co.

MESSRS. FOSTER, BLACKETT, and WILSON, LTD., of Newcastle-on-Tyne, are voluntarily winding up their company for the convenience of reconstruction.

## IMPORTS OF CHEMICAL PRODUCTS

AT

## THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

## LONDON.

ending April 25th.

acid—

15 cks. 103 carboys A. & M. Zimmermann  
103 pks.

## Alkali—

Germany, 9 cks. L. & I. D. Jt. Co.

## Alum—

Belgium, 48 cks. R. W. Greeff & Co.

## Alumina—

Germany, 29 cks. R. W. Greeff & Co.

## Ammonium Chloride—

Germany, 4 cks. F. Boehm  
Holland, 10 H. Lorenz

## Antimony Ore—

Germany, 12 t. Stobbs, Wilson & Co.

Portugal, 9

Union L. Co.

"

H. R. Merton &amp; Co.

## Arsenic—

Germany, 30 cks. City Coml. Wf. Co.  
" 5 kgs. B. & F. Wf. Co.



|                                      |                                |                                   |                           |
|--------------------------------------|--------------------------------|-----------------------------------|---------------------------|
| <b>Asbestos</b> —                    |                                | Rep. Col., 594                    | L. & I. D. Jt. Co.        |
| France, 620                          | Girard Frs. & Co.              | E. Indies, 62                     | R. & J. Henderson         |
| Italy, 272                           | Pickford & Co.                 | <b>Extracts</b>                   |                           |
| Holland, 6                           | G. Rahn & Co.                  | Germany, 6 cs.                    | H. Lambert                |
| Italy, 30                            | Brit. Asbestos Co.             | U. States, 55 pks.                | W. Burton & Sons          |
| " 511                                | Imperial Asbestos Co.          | " 100 bxs. 1 brl.                 | L. & I. D. Jt. Co.        |
| " 113                                | London Asbestos Co.            | Denmark, 20 cks. 3 cs. 3 pks.     | Bailey & Leetham          |
| Canada, 250                          | C. S. Lovell                   | France, 4 8                       | Bennett S. S. Co.         |
| " 250                                | Deering & Robottom             | " 50                              | B. & F. Wf. Co.           |
| " 687                                | Furness, Withy & Co.           | Denmark, 17 pks.                  | R. T. Turnbull & Co.      |
| Germany, 15                          | T. H. Lee                      | France, 330                       | T. H. Lee                 |
| <b>Barytes</b> —                     |                                | " 330                             | L. J. Levinstein & Sons   |
| Germany, 20 cks.                     | Steinhoff, Sons & Co.          | Canada, 160                       | A. J. Humphrey            |
| " 132                                | W. Harrison & Co.              | <b>Fustic</b>                     |                           |
| " 250 bgs. C. F. Webster & Co.       |                                | B. W. I., 6 t.                    | J. Hales, Caird & Co.     |
| " 19                                 | E. J. Diggins                  | <b>Gambier</b>                    |                           |
| Belgium, 41                          | J. L. Lyon & Co.               | Japan, 211 bls.                   | P & O. Co.                |
| Germany, 67                          | H. Lambert                     | <b>Indigo</b>                     |                           |
| <b>Bleaching Powder</b> —            |                                | San Salvador, 57 chts.            | Patry & Pasteur           |
| Germany, 47 cks.                     | H. Wallace & Co.               | E. Indies, 10                     | Biny & Co.                |
| <b>Bone Meal</b> —                   |                                | " 55                              | Walker, Munroe, & Co.     |
| E. Indies, 250 t.                    | A. Hunter & Co.                | " 3                               | Arbuthnot, Latham & Co.   |
| <b>Caoutchouc</b> —                  |                                | " 30                              | J. H. Hall & Wilson       |
| Singapore, 400 c.                    | Hattenbach & Co.               | " 9                               | P. Macfadyen & Co.        |
| Zanzibar, 2                          | L. & I. D. Jt. Co.             | " 9                               | R. von Glehn & Sons       |
| U. States, 62                        | Chantard & Christensen         | " 67                              | Croydale & Co.            |
| France, 16                           | S. Figgis & Co.                | " 8                               | Adamson & Watson          |
| Aden, 10                             | L. & I. D. Jt. Co.             | " 221                             | L. & I. D. Jt. Co.        |
| Mauritius, 18                        | Hammond & Co.                  | <b>Logwood</b>                    |                           |
| Madagascar, 130                      | Forbes, Forbes & Co.           | W. I., 30 t.                      | S. Dobree & Sons          |
| Zanzibar, 142                        | S. Figgis & Co.                | <b>Myrabolams</b>                 |                           |
| P. E. Africa, 24                     | Wallace Bros.                  | E. Indies, 1,000 pokts.           | Montgomerie & Co.         |
| Germany, 60                          | Andersen, Weber & Co.          | " 2,530 bgs.                      | L. & I. D. Jt. Co.        |
| " 81                                 | Clarke & Smith                 | " 670                             | Darling Bros.             |
| U. States, 3                         | Lunham & Moore                 | " 346                             | Baxter & Hoare            |
| France, 8                            | Prop. Bull Wf.                 | " 630                             | S. Barrow & Bro., Ltd.    |
| Madagascar, 80                       | L. & I. D. Jt. Co.             | " 1,090                           | Marshall & French         |
| Germany, 15                          | Prop. Bull Wf.                 | " 1,104                           | J. Greig                  |
| <b>Castor Oil</b> —                  |                                | " 275                             | Dalton & Young            |
| B. W. I., 20 cs.                     | H. Davies                      | " 1,000                           | P. & O. Co.               |
| Italy, 20                            | City Coml. Wf., Ltd.           | <b>Saffron</b>                    |                           |
| <b>Caustic Potash</b> —              |                                | Spain, 1 cs.                      | Bennett S. S. Co.         |
| France, 25 drs.                      | J. Barber & Co.                | <b>Shumac</b>                     |                           |
| " 9 cks.                             | J. A. Reid                     | Italy, 350 bgs.                   | Beresford & Co.           |
| " 85                                 | Petri Bros.                    | " 150                             | Clark, Gray & Co.         |
| Belgium, 8                           |                                | " 150                             | G. E. Scott               |
| <b>Chemicals (otherwise under)</b> — |                                | <b>Tanner's Bark</b>              |                           |
| France, 6550                         | B. & F. Wf. Co.                | Belgium, 1 t.                     | T. H. Lee                 |
| Germany, 4                           | L. & I. D. Jt. Co.             | " 50                              | S. Barrow & Bro.          |
| U. States, 22                        | H. W. Peabody & Co.            | Natal, 50                         | Union L. Co.              |
| Germany, 7                           | Pickford & Co.                 | U. States, 50                     | A. & W. Nesbitt           |
| France, 100                          | C. F. Gerhardt                 | " 50                              | Boucher, Mortimore & Co.  |
| Holland, 200                         | R. Waters                      | Melbourne, 19                     | A. J. Humphrey & Co.      |
| Germany, 50 pks.                     | A. & M. Zimmermann             | <b>Valonia</b>                    |                           |
| Belgium, 13                          | T. Palmer                      | A. Turkey, 48 t.                  | Adam Bros.                |
| U. States, 1 cs.                     | Hcpcraft & Broadwater          | <b>Farina</b> —                   |                           |
| Holland, 53                          | P. W. Harris                   | Germany, 50 bgs.                  | H. Lorenz                 |
| Germany, 28                          | Phillips & Graves              | " 50                              | R. G. Hall & Co.          |
| " 6                                  | T. H. Lee                      | <b>French Chalk</b> —             |                           |
| " 115                                | Flageolet & Co.                | Austria, 438                      | Taylor Bros.              |
| France, 10                           | A. & M. Zimmermann             | France, 38                        | A. Zumbach & Co.          |
| Melbourne, 55                        | H. Lorenz                      | <b>Glucose</b> —                  |                           |
| Holland, 15                          |                                | France, 200 pks. 200 c.           | W. E. Cole                |
| <b>Cream of Tartar</b> —             |                                | " 200                             | Barrett, Tagant, & Co.    |
| France, 1 ck. 20 kgs.                | B. & F. Wf. Co.                | U. States, 750                    | G. Hedges & Son           |
| " 23                                 | W. C. Bacon & Co.              | " 500                             | L. Norman & Co., Ltd.     |
| Spain, 12 bgs.                       | Anderson, Weber & Co.          | " 50                              | Deering & Robottom        |
| France, 5                            | M. Ashby, Ltd.                 | " 500                             | E. Dixon                  |
| Holland, 4                           | Kirkpatrick & Co.              | France, 100                       | L. Norman & Co., Ltd.     |
| Portugal, 19                         | C. Webster                     | U. States, 500                    | Furness, Withy, & Co.     |
| <b>Dextrine</b> —                    |                                | " 450                             | L. & I. D. Jt. Co.        |
| Germany, 200 bgs.                    | W. Balchin                     | " 750                             | R. G. Hall & Co.          |
| " 100                                | J. Barber & Co.                | <b>Glue</b> —                     |                           |
| <b>Dyestuffs</b> —                   |                                | " 1,794                           |                           |
| <b>Argols</b>                        |                                | <b>Iodine</b> —                   |                           |
| Italy, 1,572 bgs.                    | B. Jacob & Sons                | Rep. Col., 4 kgs.                 | L. & I. D. Jt. Co.        |
| " 46 cks.                            | Thames S. Tug & L. Co.         | <b>Lamp Black</b> —               |                           |
| Cape Town, 41 bgs.                   | Seawright, Bell & Co.          | U. States, 50 hds.                | J. Melvin                 |
| <b>Cochineal</b>                     |                                | <b>Lead Acetate</b> —             |                           |
| Canaries, 2 bgs.                     | J. W. Borland                  | Germany, 32 cks.                  | F. Boehm                  |
| " 4                                  | W. M. Smith & Sons             | <b>Litharge</b> —                 |                           |
| " 10                                 | Sperling & Williams            | Holland, 35 cks.                  | Spies Bros. & Co.         |
| " 10                                 | Swanston & Co.                 | Germany, 2                        | H. Lambert                |
| <b>Cutch</b>                         |                                | <b>Lithopone</b> —                |                           |
| Rangoon, 900 bxs.                    | Lewis & Pent                   | Holland, 111 cks.                 | Spies Bros. & Co.         |
| " 500                                | Arracan Co., Ltd.              | <b>Manure</b> —                   |                           |
| <b>Divi Divi</b>                     |                                | Sydney, 4 t.                      | G. S. Yuill & Co.         |
| Rangoon, 50 bgs.                     | Kleinwort, Sons & Co.          | " 130                             | E. Packard & Co.          |
|                                      |                                | <b>Molasses</b> —                 |                           |
|                                      |                                | Belgium, 40 cks. 210 c.           | Union L. Co., Ltd.        |
|                                      |                                | <b>Nitre</b> —                    |                           |
|                                      |                                | Chili, 13,782 bgs.                | A. Montgomery & Co.       |
|                                      |                                | <b>Ochre</b> —                    |                           |
|                                      |                                | Holland, 4 cks.                   | Hernu, Peron, & Co.       |
|                                      |                                | " 2                               | 10 pks. Phillips & Graves |
|                                      |                                | France, 80                        | W. Harrison & Co.         |
|                                      |                                | " 10                              | J. Burnett & Sons         |
|                                      |                                | <b>Phosphate Rock</b> —           |                           |
|                                      |                                | Belgium, 125 t.                   | H. B. Larkins             |
|                                      |                                | " 1                               | J. Barber & Co.           |
|                                      |                                | " 580 t.                          | Anglo-Contl. G. Wks.      |
|                                      |                                | " 250                             | West & Penrose            |
|                                      |                                | Holland, 210                      | J. Gibbs & Co.            |
|                                      |                                | Belgium, 450                      | T. Ronaldson & Co.        |
|                                      |                                | " 135                             | Odams Manure Co.          |
|                                      |                                | France, 300                       | T. Farmer & Co.           |
|                                      |                                | " 300                             | W. E. Cole                |
|                                      |                                | <b>Pitch</b> —                    |                           |
|                                      |                                | N. Russia, 850 brls.              | Fellows, Morton, & Co.    |
|                                      |                                | <b>Plumbago</b> —                 |                           |
|                                      |                                | Ceylon, 165 cks.                  | G. S. N. Co.              |
|                                      |                                | Germany, 40                       | B. Gallaway               |
|                                      |                                | " 10                              | T. H. Lee                 |
|                                      |                                | Ceylon, 205 brls.                 | C. Rowbotham              |
|                                      |                                | Germany, 10 cks.                  | G. Mayor & Co.            |
|                                      |                                | <b>Potash</b> —                   |                           |
|                                      |                                | Germany, 18 cks. 40 dms.          | J. M. Steel & Co.         |
|                                      |                                | <b>Potassium Carbonate</b> —      |                           |
|                                      |                                | Germany, 635 c.                   | W. G. Blagden             |
|                                      |                                | " 120                             | Petri Bros.               |
|                                      |                                | Belgium, 40                       | J. A. Reid                |
|                                      |                                | France, 109                       | Petri Bros.               |
|                                      |                                | " 125                             | J. A. Reid                |
|                                      |                                | <b>Potassium Bicarbonate</b> —    |                           |
|                                      |                                | Germany, 10 cks.                  | A. & M. Zimmermann        |
|                                      |                                | <b>Potassium Cyanide</b> —        |                           |
|                                      |                                | Holland, 5 cs.                    | G. Rahn & Co.             |
|                                      |                                | <b>Potassium Oxymuriate</b> —     |                           |
|                                      |                                | Sweden, 20 kgs.                   | G. Boor & Co.             |
|                                      |                                | <b>Potassium Sulphate</b> —       |                           |
|                                      |                                | Bluff, 5 cks. Nat. Mort. & A. Co. |                           |
|                                      |                                | <b>Pumice Stone</b> —             |                           |
|                                      |                                | Italy, 9 t.                       | Blundell, Spence, & Co.   |
|                                      |                                | " 21                              | O'Hara & Hoar             |
|                                      |                                | U. States, 26 c.                  | Tatham, Bromage, & Co.    |
|                                      |                                | <b>Quicksilver</b> —              |                           |
|                                      |                                | Italy, 100 flasks.                | H. Bath & Sons            |
|                                      |                                | <b>Rosin</b> —                    |                           |
|                                      |                                | U. States, 4,397 brls.            | H. Hill & Sons            |
|                                      |                                | " 60                              | American Trading Co.      |
|                                      |                                | <b>Saltpetre</b> —                |                           |
|                                      |                                | Germany, 40 cks.                  | J. Hall & Co.             |
|                                      |                                | " 60                              | P. Hecker & Co.           |
|                                      |                                | E. Indies, 1,302 bgs.             | Lucas & Spencer's Wf.     |
|                                      |                                | <b>Soda</b> —                     |                           |
|                                      |                                | Belgium, 100 c.                   | T. Ronaldson & Co.        |
|                                      |                                | <b>Sodium Acetate</b> —           |                           |
|                                      |                                | Belgium, 15 cks.                  | H. Lorenz                 |
|                                      |                                | France, 31                        | "                         |
|                                      |                                | <b>Sodium Prussiate</b> —         |                           |
|                                      |                                | Belgium, 19 brls.                 | May & Baker               |
|                                      |                                | <b>Starch</b> —                   |                           |
|                                      |                                | Germany, 2,690 cs.                | Horne & Co.               |
|                                      |                                | France, 200                       | W. E. Cole                |
|                                      |                                | " 200                             | E. & T. Pink              |
|                                      |                                | " 107 pks.                        | B. & F. Wf. Co.           |
|                                      |                                | Holland, 1,150 cs.                | Little & Johnston         |
|                                      |                                | " 80                              | Hernu, Peron, & Co.       |
|                                      |                                | " 200                             | G. Rahn & Co.             |
|                                      |                                | " 235                             | Phillips & Graves         |
|                                      |                                | Belgium, 303                      | F. Claydon & Co.          |
|                                      |                                | " 40                              | Sawer, Sons, & Co. Ltd.   |
|                                      |                                | " 190                             | Leach & Co.               |
|                                      |                                | " 40                              | Taylor Bros.              |
|                                      |                                | Germany, 7                        | Phillips & Graves         |
|                                      |                                | Holland, 30                       | T. H. Lee                 |
|                                      |                                | Belgium, 310                      | 20 bgs. E. & T. Pink      |
|                                      |                                | " 200                             | Vokins & Co., Ltd.        |
|                                      |                                | Holland, 132                      | "                         |
|                                      |                                | <b>Stearine</b> —                 |                           |
|                                      |                                | France, 10 bgs.                   | T. Trapp & Sons           |
|                                      |                                | " 130                             | Walbaum & Tosetti         |
|                                      |                                | <b>Sulphur</b> —                  |                           |
| U. States, 10                        | Deering & Robottom             |                                   |                           |
| France, 100                          | G. Boor & Co.                  |                                   |                           |
| <b>Talc</b> —                        |                                | Italy, 10 t.                      | F. Smith                  |
| " 10                                 | G. Boor & Co.                  |                                   |                           |
| <b>Tartaric Acid</b> —               |                                | France, 4100                      | Brasch & Rochemont        |
| Holland, 6 cks. 4 pks.               | F. C. Deuse & Co.              |                                   |                           |
| France, 4                            | B. & F. Wf. Co.                |                                   |                           |
| <b>Ultramarine</b> —                 |                                | Holland, 2 cs.                    | W. H. Carey & Sons        |
| Germany, 2                           | H. Brooks & Co.                |                                   |                           |
| " 5                                  | Haefner, Hilpert, & Co.        |                                   |                           |
| " 10 pks.                            | Steinhoff, Sons & Co.          |                                   |                           |
| Holland, 7                           | Haefner, Hilpert, & Co.        |                                   |                           |
| <b>Varnish</b> —                     |                                | Germany, 6 pks.                   | L. & I. D. Jt. Co.        |
| U. States, 46                        | Lunham & Moore                 |                                   |                           |
| Holland, 32                          | Robinson, Roberts, & Co.       |                                   |                           |
| <b>Verdigris</b> —                   |                                | France, 64                        | B. & F. Wf. Co.           |
| <b>Waste Salt</b> —                  |                                | Germany, 25 t.                    | A. H. Key                 |
| <b>White Lead</b> —                  |                                | Germany, 9 cks.                   | Haefner, Hilpert, & Co.   |
| Holland, 45                          | Randall Bros. & Co.            |                                   |                           |
| " 26                                 | A. Zumbach & Co.               |                                   |                           |
| " 50                                 | T. & W. Farmier                |                                   |                           |
| Germany, 5                           | Petri Bros.                    |                                   |                           |
| " 18                                 | Randall Bros.                  |                                   |                           |
| " 22                                 | M. Ashby, Ltd.                 |                                   |                           |
| Holland, 47                          | Taylor Bros.                   |                                   |                           |
| " 20                                 | A. & M. Zimmermann             |                                   |                           |
| Belgium, 10                          | Sawer, Sons, & Co.             |                                   |                           |
| " 16 brls.                           | J. L. Lyon & Co.               |                                   |                           |
| Holland, 20 cks.                     | H. B. Alder & Co.              |                                   |                           |
| " 1                                  | Phillips & Graves              |                                   |                           |
| " 3                                  | D. Storer & Son                |                                   |                           |
| " 20                                 | Blundell, Spence, & Co.        |                                   |                           |
| France, 19                           | J. Watt & Son                  |                                   |                           |
| <b>Wood Pulp</b> —                   |                                | Norway, 150 bls.                  | M. G. Skramme             |
| " 209 pks.                           | W. E. Bott & Co.               |                                   |                           |
| " 2,403                              | A. H. Key                      |                                   |                           |
| " 3,064                              | E. J. & W. Goldsmith           |                                   |                           |
| " 1,500                              | Moreton Cos. Ltd.              |                                   |                           |
| Germany, 406                         | W. Friedlander                 |                                   |                           |
| Sweden, 200                          | W. E. Bott & Co.               |                                   |                           |
| " 80                                 | Tough & Henderson              |                                   |                           |
| Norway, 73 bls.                      | "                              |                                   |                           |
| Germany, 270 pks.                    | Henderson, Craig, & Co.        |                                   |                           |
| Holland, 10                          | G. Rahn & Co.                  |                                   |                           |
| Norway, 200                          | Christophersen, Andrews, & Co. |                                   |                           |
| Belgium, 1,368                       | F. Claydon & Co.               |                                   |                           |
| <b>Zinc Oxide</b> —                  |                                | Holland, 50 cks.                  | M. Ashby, Ltd.            |
| Germany, 140                         | "                              |                                   |                           |
| " 172                                | J. Mann                        |                                   |                           |
| U. States, 100                       | 100 brls. M. Ashby, Ltd.       |                                   |                           |
| <b>Zinc Sulphate</b> —               |                                | Germany, 31 cks.                  | City Coml. Wf.            |
| <b>Zinc White</b> —                  |                                | Holland, 500 cks.                 | Saunders & Son            |
| " 20                                 | R. W. Greeff & Co.             |                                   |                           |
| Germany, 50                          | H. Lambert                     |                                   |                           |
| Belgium, 50                          | Ross & Deering                 |                                   |                           |

## LIVERPOOL.

Week ending April 23rd.

Acetic Acid—  
Rot



**Meal**—  
 Bay, 2,500 bgs.  
**Cite**—  
 derma, 6,602 bgs.  
**ite of Lime**—  
 paraiso, 600 sks.  
**x**—  
 paraiso, 200 bgs.  
**chouc**—  
 ve, 7 cks. 17 cs.  
**or Oil**—  
 seilles, 285 brls. 155 cs.  
**icals (otherwise undescribed)**  
 aburg, 20 cs. 1 ck.  
**rs**—  
 aburg, 10 cs. 4 cks. 6 bskts.  
 werp, 1 14  
**m of Tartar**—  
 seilles, 10 kgs.  
**rine**—  
 aburg, 10 bgs.  
**uffs**  
 nnatto  
 deaux, 5 cs.  
 rapore, 1,100 bgs.  
 lvi Divi  
 aburg, 702 bgs.  
 xtracts  
 adelphia, 250 bls.  
 ustic  
 thagena, 430 ps.  
 ambler  
 rapore, 203 bgs. 949 bls.  
**ogwood**  
 annah, La Mar (Ja.), 318 t. Archer  
 Brs. & Reid  
**madder**  
 seilles, 1 ck. F. Behrend  
**affron**  
 encia, 3 cs.  
**aa**—  
 flingen, 100 bgs.  
**ose**—  
 report News, 300 brls.  
 e York, 400  
 ton, 450  
 adelphia, 50  
 103, 34 crts. Richards &  
 Ward  
 terdam, 43 bgs.  
 ton, 1 kg. Escombe Brs.  
 & Co.  
**10**—  
 e York, 1 cs.  
**orial Earth**—  
 nburg, 51 bgs.  
**ne**—  
 paraiso, 26 brls. A. Gibbs  
 & Son  
 " 12  
**p Black**—  
 adelphia, 140 bgs.  
**estone**—  
 werp, 2 cs. J. T.  
 Fletcher & Co.  
 " 2  
**opone**—  
 terdam, 2 cks.  
**ganese Ore**—  
 yrna, 700 t. Darwin &  
 Mostyn Iron Co.  
**um**—  
 terdam, 17 cks.  
**ate**—  
 anchaco, 20 bgs. J. M.  
 Gildermaster  
**re**—  
 seilles, 30 brls. 70 cks.  
**it**—  
 adelphia, 20 cs.  
**ffin Scale**—  
 adelphia, 116 brls.  
 e York, 975 Thompson  
 & Bedford Co.  
**nbago**—  
 lifax, N.S., 2 brls. F. Krupp  
**sh**—  
 werp, 4 dms.  
**assium Nitrate**—  
 paraiso, 20 bgs. J. M.  
 Gildermaster  
**tes**—  
 elva, 3,331 t. Matheson  
 & Co.

**Rosin**—  
 Boston, 1,002 brls.  
 New York, 3,147  
**Saltpetre**—  
 Hamburg, 10 brls. 4 cks.  
 Calcutta, 2,803 bgs. Ralli Brs.  
**Soap**—  
 Newport News, 332 brls. 175 bdis.  
 Baltimore, 100  
 N. Orleans, 945  
 Rotterdam, 1 cs.  
 Marseilles, 138 bxs.  
**Starch**—  
 Newport News, 700 bgs.  
 Rotterdam, 3 cs.  
 Bordeaux, 5  
 Boston, 400 600 sks.  
**Stearine**—  
 Antwerp, 26 cks.  
**Tallow**—  
 N. Orleans, 150 tcs. J. Nelson  
 River Plate, 187 brls. & Sons, Ld.  
 Zarate, 273 pps.  
 New York, 150 bds.  
 B. Ayres, 260 pps. 224 hf.-pps.  
 " 734 brls. River Plate  
 Fresh Meat Co.  
 Boston, 100 tcs.  
**Tartar**—  
 Bordeaux, 11 cks.  
**Tartaric Acid**—  
 Rotterdam, 3 cks.  
 Marseilles, 2  
**Treacle**—  
 Philadelphia, 25 brls.  
**Varnish**—  
 New York, 9 brls.  
**Waste Salt**—  
 New York, 5,048 bgs.  
**White Lead**—  
 Rotterdam, 38 cks.  
**Wood Pulp**—  
 Rotterdam, 208 bls.  
 Gothenburg, 79 M. Relph & Co  
**Zinc Oxide**—  
 Antwerp, 125 brls.  
 New York, 23  
**Zinc Skimmings**—  
 Rotterdam, 21 pks.

# MANCHESTER.

Week ending April 25th.

**Alumina Sulphate**—  
 Rotterdam, 29 cks.  
**Aluminous Cake**—  
 Rotterdam, 65 cks.  
**Ammonium Chloride**—  
 Rotterdam, 2 cks.  
**Antimony**—  
 Rotterdam, 17 cks.  
**Barytes**—  
 Antwerp, 50 bgs.  
 Rotterdam, 20 cks.  
**Colours**—  
 Antwerp, 9 cks. 10 cs.  
 Rotterdam, 17 23  
 " 92 brls. 26 bxs.  
 Hamburg, 9  
**Cream of Tartar**—  
 Rotterdam, 40 kgs.  
**Dyestuffs**—  
 Allzarine  
 Rotterdam, 35 cks.  
 Extracts  
 Rotterdam, 4 cks.  
 Calais, 2  
 Logwood  
 Morant Bay, 384 t.  
**Farina**—  
 Rotterdam, 415 bgs.  
 Stettin, 600 sks. Brown,  
 Geveke, & Co.  
 " Hamburg, 1,050  
 100 bgs.  
**Glucose**—  
 Rotterdam, 10 kgs.  
**Glue**—  
 Rouen, 18 cks. 55 cs.  
 Antwerp, 16  
 Rotterdam, 43 bgs.  
 Stettin, 40  
 Calais, 60  
**Limestone**—  
 Antwerp, 2 crts. J. T. Fletcher  
 & Co.  
 " 4 cs.

**Litharge**—  
 Rotterdam, 2 cks.  
**Ochre**—  
 Calais, 17 cks.  
**Pitch**—  
 Rotterdam, 13 cks.  
 Hamburg, 15 brls.  
**Potash**—  
 Calais, 7 cks. 9 dms.  
**Soda Crystals**—  
 Rouen, 6 cks.  
**Sodium**—  
 Antwerp, 8 cs.  
 Rotterdam, 8 cks.  
**Starch**—  
 Antwerp, 262 cs.  
 Rotterdam, 100  
**Sulphate**—  
 Antwerp, 200 bgs.  
**Sulphuric Acid**—  
 Rotterdam, 10 dms.  
**Tar Waste**—  
 Rotterdam, 1 cs.  
**Tartar**—  
 Bordeaux, 2 cks.  
**Tartaric Acid**—  
 Rotterdam, 18 cks.  
**Varnish**—  
 Calais, 6 cks.  
**White Lead**—  
 Rotterdam, 4 cks.  
**Wood Pulp**—  
 Krageroe, 4,850 bls.  
 Skien, 3,193  
 Christiania, 914 W. H. Ingram  
 Drammen, 1,849  
 Christiania, 2,900  
 Rotterdam, 800 pks.  
**Zinc Oxide**—  
 Antwerp, 35 brls.  
 Rotterdam, 75

# HULL.

Week ending April 25th.

**Albumen**—  
 Dunkirk, 18 cs. Wilson,  
 Sons, & Co., Ld.  
 Riga, 1 brl.  
**Asbestos**—  
 Riga, 5 cs. Wilson,  
 Sons, & Co., Ld.  
 Hamburg, 5 pks. Bailey &  
 Leatham  
**Barytes**—  
 Rotterdam, 23 cks. 50 bgs. W. & C. L.  
 Ringrose  
 Antwerp, 33 Bailey & Leatham  
 Rotterdam, 22 Hutchinson & Son  
 Antwerp, 200 bgs.  
**Bone Meal**—  
 Bombay, 2,000 bgs.  
**Chemicals (otherwise undescribed)**  
 Hamburg, 2 cks. 20 kgs.  
 Bremen, 7 1 cs. 1  
 " Veltmann & Co.  
 Hamburg, 32 Wilson,  
 Sons, & Co., Ld.  
 Dunkirk, 1  
 Antwerp, 110 pks. Wilson,  
 Sons, & Co., Ld.  
**Cod Oil**—  
 Christiansund, 80 brls. Wilson,  
 Sons, & Co., Ld.  
 Aalesund, 72  
 Bergen, 1  
**Colours**—  
 Hamburg, 1 cs. Wilson,  
 Sons, & Co., Ld.  
 Rotterdam, 2 cks. Hutchinson  
 & Son  
 " 2 Wilson,  
 Sons, & Co., Ld.  
 Amsterdam, 1 Hutchinson & Son  
 Stettin, 72 Wilson,  
 Sons, & Co., Ld.  
 Bremen, 1  
 Antwerp, 3 44 pks. " 29 cs. 7 brls.  
 Rotterdam, 49 W. & C. L. Ringrose  
 6 bxs.  
**Creosote Salt**—  
 Hamburg, 8 cks.  
**Cryolite**—  
 Copenhagen, 4 cks. Wilson,  
 Sons, & Co., Ld.  
**Dextrine**—  
 Stettin, 100 bgs. Wilson,  
 Sons, & Co., Ld.

**Dyestuffs**—  
 Allzarine  
 Rotterdam, 23 cks. 17 cs. W. & C. L.  
 Ringrose  
 Divi Divi  
 Hamburg, 24 bgs. Wilson,  
 Sons, & Co., Ld.  
 Indigo  
 Kurrachee, 137 cs. Wilson,  
 Sons, & Co., Ld.  
 Madder  
 Rotterdam, 1 ck. Hutchinson  
 & Son  
**Myrabolams**  
 Bombay, 8,944 bgs.  
**Farina**—  
 Stettin, 350 bgs. Wilson,  
 Sons, & Co., Ld.  
 Ghent, 280 cs. " 475 bgs.  
**Glucose**—  
 Stettin, 200 bgs.  
**Glue**—  
 Rotterdam, 10 bgs. Hutchinson  
 & Son  
 Rouen, 80 bdis. Rawson &  
 Robinson  
 Antwerp, 5 cks. Bailey &  
 Leatham  
 Hamburg, 100 bgs. Sissons Brs.  
 & Co.  
 " 38 bls. Wilson,  
 77 cks. Sons, & Co., Ld.  
 Antwerp, 13 pks. " 1  
**Kaolin**—  
 Rotterdam, 20 cks. Hutchinson  
 & Son  
**Limestone**—  
 Antwerp, 3 cs. Bailey  
 & Leatham  
 " 3 Wilson,  
 Sons, & Co., Ld.  
**Lithopone**—  
 Amsterdam, 60 cks. Hutchinson  
 & Son  
**Manure**—  
 Ghent, 160 t.  
**Mineral White**—  
 Rotterdam, 2 cks. W. & C. L.  
 Ringrose  
**Naphtha**—  
 Dunkirk, 3 cks. Wilson,  
 Sons, & Co., Ld.  
**Pitch**—  
 Antwerp, 20 cks. Bailey &  
 Leatham  
**Potash**—  
 Dunkirk, 24 cks. 3 pks. Wilson,  
 Sons, & Co., Ld.  
**Saltpetre**—  
 Hamburg, 10 kgs. Wilson,  
 Sons, & Co., Ld.  
 " 5 cks. Lofthouse &  
 Saltmer  
**Starch**—  
 Antwerp, 40 cs. Bailey &  
 Leatham  
 Bremen, 3,477 Veltmann & Co.  
 Antwerp, 160 Woodhouse & Co.  
**Stearine**—  
 Antwerp, 101 bgs. Wilson,  
 Sons, & Co., Ld.  
**Tallow**—  
 Melbourne, 443 pks. Wilson,  
 Sons, & Co., Ld.  
 Dunkirk, 12 cks. " 1  
**Tar**—  
 Dunkirk, 15 cks. Wilson,  
 Sons, & Co., Ld.  
**Tartaric Acid**—  
 Rotterdam, 4 cks. Hutchinson  
 & Son  
**Ultramarine**—  
 Rotterdam, 1 ck. Hutchinson  
 & Son  
**Waste Salt**—  
 Hamburg, 25 t. 10 c. 623 bgs.  
**White Lead**—  
 Antwerp, 34 cks. Bailey &  
 Leatham  
 Rotterdam, 97 cks. Hutchinson  
 & Son  
 18 cs.  
**Wolfram**—  
 Hamburg, 10 cs. Wilson,  
 Sons, & Co., Ld.  
**Wood Pulp**—  
 Hamburg, 45 bls. Wilson,  
 Sons, & Co., Ld.  
 Hango, 600 J. Good & Sons  
 Ronneby, 1,600



**GLASGOW.**

Week ending April 30th.

|                                      |                          |                    |
|--------------------------------------|--------------------------|--------------------|
| <b>Acetate of Lime—</b>              |                          |                    |
| Philadelphia,                        | 342 bgs.                 |                    |
| <b>Albumen—</b>                      |                          |                    |
| Hamburg,                             | 2 cks.                   |                    |
| <b>Alum—</b>                         |                          |                    |
| Rotterdam,                           | 228 bgs.                 | J. Rankine & Son   |
| Hamburg,                             | 67 cks.                  |                    |
| <b>Aniline—</b>                      |                          |                    |
| Rotterdam,                           | 2 cks.                   | J. Rankine & Son   |
| <b>Aniline Colours—</b>              |                          |                    |
| Rotterdam,                           | 3 cs.                    | J. Rankine & Son   |
| <b>Aniline Salts—</b>                |                          |                    |
| Rotterdam,                           | 14 cks.                  | J. Rankine & Son   |
| <b>Barium Chloride—</b>              |                          |                    |
| Rotterdam,                           | 4 cks.                   | J. Rankine & Son   |
| <b>Barytes—</b>                      |                          |                    |
| Rotterdam,                           | 265 cks.                 |                    |
| <b>Colours—</b>                      |                          |                    |
| Rotterdam,                           | 49 pks.                  |                    |
| <b>Cream of Tartar—</b>              |                          |                    |
| Marseilles,                          | 5 cks.                   | J. Dawson & Co.    |
| Barcelona,                           | 3 brls.                  |                    |
| <b>Castor Oil—</b>                   |                          |                    |
| Marseilles,                          | 53 cks. 260 brls. 11 cs. |                    |
| Antwerp,                             | 28                       |                    |
| <b>Cottonseed Oil—</b>               |                          |                    |
| Newport News,                        | 60 brls.                 | William T. Geddes  |
| "                                    | 55                       | J. M'Nairn & Co.   |
| <b>Dyestuffs—</b>                    |                          |                    |
| <b>Alizarine</b>                     |                          |                    |
| Rotterdam,                           | 39 cks. 1 brl.           | J. Rankine & Son   |
| "                                    | 147 pks.                 |                    |
| <b>Argols</b>                        |                          |                    |
| Bordeaux,                            | 57 cks.                  |                    |
| <b>Extracts</b>                      |                          |                    |
| Marseilles,                          | 60 cks.                  |                    |
| Antwerp,                             | 6                        |                    |
| <b>Madder</b>                        |                          |                    |
| Marseilles,                          | 3 cks.                   |                    |
| <b>Myrabolams</b>                    |                          |                    |
| Bombay,                              | 645 bgs.                 |                    |
| <b>Dyestuffs (otherwise undes.)—</b> |                          |                    |
| Philadelphia,                        | 50 brls.                 |                    |
| <b>French Chalk—</b>                 |                          |                    |
| Fiume,                               | 100 bgs.                 | P. M'Intosh & Son  |
| "                                    | 250                      |                    |
| <b>Glucose—</b>                      |                          |                    |
| Philadelphia,                        | 300 brls.                |                    |
| Newport News,                        | 50                       | H. D. Hardie & Co. |

|                             |                  |                     |
|-----------------------------|------------------|---------------------|
| <b>Glue—</b>                |                  |                     |
| Hamburg,                    | 10 bgs. 5 bskts. |                     |
| <b>Guano—</b>               |                  |                     |
| Onundarfjord,               | 516 sks.         |                     |
| <b>Lead Acetate—</b>        |                  |                     |
| Hamburg,                    | 26 cks.          |                     |
| <b>Ochre—</b>               |                  |                     |
| Marseilles,                 | 51 cks.          |                     |
| <b>Oxalic Acid—</b>         |                  |                     |
| Rotterdam,                  | 6 cks.           | J. Rankine & Son    |
| <b>Painters' Colours—</b>   |                  |                     |
| Antwerp,                    | 6 cks.           |                     |
| <b>Phosphate Rock—</b>      |                  |                     |
| Bona,                       | 1,100 t.         | Crookston Brs.      |
| <b>Potash—</b>              |                  |                     |
| Rotterdam,                  | 99 cks.          | J. Rankine & Son    |
| Hamburg,                    | 1                |                     |
| <b>Potassium Prussiate—</b> |                  |                     |
| Antwerp,                    | 1 ck.            |                     |
| <b>Pyrites—</b>             |                  |                     |
| Huelva,                     | 1,700 t.         |                     |
| <b>Salicylate Acid—</b>     |                  |                     |
| Rotterdam,                  | 1 cs.            | J. Rankine & Son    |
| <b>Soap—</b>                |                  |                     |
| Rotterdam,                  | 1 pk.            | J. Rankine & Son    |
| Fiume,                      | 124 cs.          |                     |
| Newport News,               | 232 brls.        | J. Dawson & Co.     |
| "                           | 720              | Wm. Buntin & Co.    |
| "                           | 122              | Wm. T. Geddes       |
| <b>Starch—</b>              |                  |                     |
| Philadelphia,               | 125 bgs.         |                     |
| Fiume,                      | 40               | Wm. Stirling & Sons |
| "                           | 250              |                     |
| Antwerp,                    | 100 cs.          |                     |
| Ghent,                      | 16               |                     |
| St. John, N.B.,             | 25 bxs.          |                     |
| Rotterdam,                  | 100              | J. Rankine & Son    |
| <b>Stearine—</b>            |                  |                     |
| Drontheim,                  | 20 cks.          |                     |
| <b>Tartar—</b>              |                  |                     |
| Bordeaux,                   | 2 cks.           |                     |
| <b>Tin Oxide—</b>           |                  |                     |
| Rotterdam,                  | 2 cks.           | J. Rankine & Son    |
| <b>Varnish—</b>             |                  |                     |
| Marseilles,                 | 10 cs.           |                     |
| Antwerp,                    | 3 cks.           |                     |
| <b>Waste Salt—</b>          |                  |                     |
| Hamburg,                    | 299 t. 405 cks.  |                     |
| <b>White Lead—</b>          |                  |                     |
| Rotterdam,                  | 50 cks.          |                     |
| Antwerp,                    | 2 cks.           |                     |
| Rotterdam,                  | 10               | J. Rankine & Son    |

|                    |          |                 |
|--------------------|----------|-----------------|
| <b>Wood Pulp—</b>  |          |                 |
| Skien,             | 418 bls. | Wm. Grant & Co. |
| Oporto,            | 300      |                 |
| Drontheim,         | 200      |                 |
| Christiania,       | 160      | Alsing & Co.    |
| "                  | 3,719    |                 |
| <b>Zinc Oxide—</b> |          |                 |
| Rotterdam,         | 25 cks.  |                 |
| Antwerp,           | 25       |                 |
| <b>Zinc White—</b> |          |                 |
| Rotterdam,         | 150 cks. |                 |

**TYNE.**

Week ending April 25th.

|                          |          |                        |
|--------------------------|----------|------------------------|
| <b>Barium Carbonate—</b> |          |                        |
| Rotterdam,               | 268 bgs. | Tyne S. S. Co.         |
| <b>Barytes—</b>          |          |                        |
| Antwerp,                 | 460 bgs. | Tyne S. S. Co.         |
| Rotterdam,               | 97       | 90 cks. Tyne S. S. Co. |
| <b>Colours—</b>          |          |                        |
| Hamburg,                 | 5 cs.    | Tyne S. S. Co.         |
| Antwerp,                 | 1 ck.    | "                      |
| Rotterdam,               | 3        | "                      |
| <b>Glue—</b>             |          |                        |
| Antwerp,                 | 1 ck.    | Tyne S. S. Co.         |
| <b>Limestone—</b>        |          |                        |
| Antwerp,                 | 3 cs.    | Tyne S. S. Co.         |
| <b>Phosphate—</b>        |          |                        |
| Antwerp,                 | 510 bgs. | Tyne S. S. Co.         |
| <b>Saltpetre—</b>        |          |                        |
| Hamburg,                 | 1 ck.    | Tyne S. S. Co.         |
| <b>Starch—</b>           |          |                        |
| Rotterdam,               | 74 cs.   | Tyne S. S. Co.         |
| <b>Tartaric Acid—</b>    |          |                        |
| Rotterdam,               | 4 cks.   | Tyne S. S. Co.         |
| <b>Wood Pulp—</b>        |          |                        |
| Skien,                   | 378 bls. |                        |
| <b>Zinc Oxide—</b>       |          |                        |
| Rotterdam,               | 20 cks.  | Tyne S. S. Co.         |

**GOOLE.**

Week ending April 22nd.

|                                          |              |       |
|------------------------------------------|--------------|-------|
| <b>Antimony—</b>                         |              |       |
| Boulogne,                                | 1 ck.        |       |
| <b>Barytes—</b>                          |              |       |
| Antwerp,                                 | 50 bgs.      |       |
| <b>Caoutchouc—</b>                       |              |       |
| Boulogne,                                | 7 cks.       |       |
| <b>Chemicals (otherwise undescribed)</b> |              |       |
| Hamburg,                                 | 4 cks. 3 cs. |       |
| <b>Colours—</b>                          |              |       |
| Rotterdam,                               | 2 cks.       |       |
| Ghent,                                   | 16           | 1 cs. |

|                                          |                 |          |
|------------------------------------------|-----------------|----------|
| <b>Dyestuffs—</b>                        |                 |          |
| <b>Alizarine</b>                         |                 |          |
| Rotterdam,                               | 31 brls.        |          |
| <b>Logwood</b>                           |                 |          |
| Hayti,                                   | 500 t.          |          |
| Jamaica,                                 | 383             |          |
| Belize,                                  | 470             |          |
| <b>Dyestuffs (otherwise undescribed)</b> |                 |          |
| Rotterdam,                               | 150 cks. 28 cs. |          |
| Boulogne,                                | 12              | 40 pks.  |
| Hamburg,                                 | 100 bgs.        |          |
| <b>Farina—</b>                           |                 |          |
| Hamburg,                                 | 450 bgs.        |          |
| <b>Glue—</b>                             |                 |          |
| Rotterdam,                               | 10 bgs. 7 cs.   |          |
| <b>Iron Oxide—</b>                       |                 |          |
| Rotterdam,                               | 128 t.          |          |
| <b>Potash—</b>                           |                 |          |
| Dunkirk,                                 | 10 cks.         | 52 dms.  |
| Antwerp,                                 | 2               | 32       |
| <b>Saltpetre—</b>                        |                 |          |
| Hamburg,                                 | 20 cks.         | 40 kgs.  |
| <b>Soap—</b>                             |                 |          |
| Rotterdam,                               | 4 cs.           |          |
| <b>Starch—</b>                           |                 |          |
| Ghent,                                   | 98 cs.          |          |
| <b>Sulphur Ore—</b>                      |                 |          |
| Huelva,                                  | 1,230 t.        |          |
| <b>Waste Salt—</b>                       |                 |          |
| Hamburg,                                 | 605 cks.        | 500 bgs. |
| <b>Zinc Oxide—</b>                       |                 |          |
| Antwerp,                                 | 5 brls.         |          |

**GRIMSBY.**

Week ending April 25th.

|                                      |                    |  |
|--------------------------------------|--------------------|--|
| <b>Albumen—</b>                      |                    |  |
| Hamburg,                             | 5 cks.             |  |
| <b>Caoutchouc—</b>                   |                    |  |
| Hamburg,                             | 16 cs.             |  |
| Antwerp,                             | 2                  |  |
| <b>Chemicals (otherwise undes.)—</b> |                    |  |
| Hamburg,                             | 1 ck. 3 cs. 2 pks. |  |
| Antwerp,                             | 5                  |  |
| <b>Colours—</b>                      |                    |  |
| Rotterdam,                           | 150 bgs.           |  |
| Hamburg,                             | 18 cks. 2 cs.      |  |
| Antwerp,                             | 12                 |  |
| <b>Dyes—</b>                         |                    |  |
| Antwerp,                             | 36 cs. 35 pks.     |  |
| Hamburg,                             | 6 cks.             |  |
| <b>Farina—</b>                       |                    |  |
| Hamburg,                             | 170 bgs.           |  |
| <b>Starch—</b>                       |                    |  |
| Antwerp,                             | 50 cs.             |  |
| <b>Wood Pulp—</b>                    |                    |  |
| Malmo,                               | 160 bls.           |  |

**EXPORTS OF CHEMICAL PRODUCTS**

OF

**THE PRINCIPAL PORTS OF THE UNITED KINGDOM.****LONDON.**

Week ending April 29th.

|                            |             |        |
|----------------------------|-------------|--------|
| <b>Acetic Acid—</b>        |             |        |
| Brisbane,                  | 10 cs.      | £18    |
| <b>Acids—</b>              |             |        |
| Penang,                    | 10 dms.     | £20    |
| <b>Alkali—</b>             |             |        |
| Montreal,                  | 11 c.       | £14    |
| <b>Ammonia (Liquid)—</b>   |             |        |
| Bombay,                    | 7 cs.       | £23    |
| Algoa Bay,                 | 4           | 13     |
| <b>Ammonium Carbonate—</b> |             |        |
| Dunkirk,                   | 1 t.        | £35    |
| Natal,                     | 5 c.        | 11     |
| Kiel,                      | 10 pks.     | 32     |
| Paris,                     | 2           | 67     |
| <b>Ammonium Chloride—</b>  |             |        |
| Trebizonde,                | 19 c.       | £35    |
| Galatz,                    | 16          | 26     |
| Cologne,                   | 7 cks.      | 47     |
| Dusseldorf,                | 2 t.        | 48     |
| <b>Ammonium Phosphate—</b> |             |        |
| Adelaide,                  | 5 c.        | £21    |
| <b>Ammonium Sulphate—</b>  |             |        |
| Hamburg,                   | 200 t. 1 c. | £1,626 |

|                           |            |       |
|---------------------------|------------|-------|
| St. Kitts,                | 5          | 45    |
| Rotterdam,                | 50 13      | 400   |
| Canaria,                  | 19 10      | 165   |
| Barbadoes,                | 125 8      | 1,035 |
| <b>Anhydrous Ammonia—</b> |            |       |
| Cologne,                  | 12 cyldrs. | £45   |
| <b>Barium Nitrate—</b>    |            |       |
| New York,                 | 2 t.       | £37   |
| <b>Borax—</b>             |            |       |
| Mannheim,                 | 5 c.       | £9    |
| Rotterdam,                | 5 cks.     | 13    |
| Gibraltar,                | 10         | 19    |
| <b>Carbolic Acid—</b>     |            |       |
| Adelaide,                 | 4 cks.     | £11   |
| Yokohama,                 | 4 t.       | 251   |
| Alexandria,               | 2 brls.    | 12    |
| Marseilles,               | 125 bgs.   | 199   |
| Cape Town,                | 20 dms.    | 9     |
| Hioogo,                   | 10 kgs. 2  | 489   |
| Antwerp,                  | 20 cs.     | 32    |
| Dusseldorf,               | 80 cks.    | 551   |
| Rotterdam,                | 48 mltls.  | 175   |
| <b>Carbonic Acid—</b>     |            |       |
| Adelaide,                 | 17 pks.    | £42   |
| <b>Caustic Soda—</b>      |            |       |
| Nelson,                   | 3 t. 3 c.  | £32   |
| Natal,                    | 2 10       | 40    |

|                                          |            |     |
|------------------------------------------|------------|-----|
| Wanganui,                                | 5 3        | 39  |
| E. London,                               | 19         | 14  |
| Algoa Bay,                               | 2 8        | 57  |
| <b>Chemicals (otherwise undescribed)</b> |            |     |
| Natal,                                   | 13 pks.    | £26 |
| Rotterdam,                               | 3 t. 12 c. | 50  |
| Genoa,                                   | 1 4        | 72  |
| Bombay,                                  | 3 cs.      | 17  |
| Pt. Said,                                | 16         | 35  |
| Montreal,                                | 2          | 10  |
| Konigsberg,                              | 5 cks.     | 95  |
| Malta,                                   | 15         | 30  |
| Dunkirk,                                 | 15 16 8    | 680 |
| Antwerp,                                 | 3          | 15  |
| Cape Town,                               | 8 pks.     | 72  |
| Algoa Bay,                               | 18         | 121 |
| Madras,                                  | 9          | 16  |
| Bombay,                                  | 3          | 14  |
| Trepori,                                 | 5 10       | 250 |
| Adelaide,                                | 10         | 30  |
| <b>Citric Acid—</b>                      |            |     |
| Adelaide,                                | 5 c.       | £32 |
| St. Petersburg,                          | 1 t. 12    | 218 |
| New York,                                | 1 5        | 167 |
| Brisbane,                                | 1 kg.      | 7   |
| Yokohama,                                | 10         | 62  |
| Christchurch,                            | 3          | 30  |
| B. Ayres,                                | 1          | 7   |
| Adelaide,                                | 10         | 62  |

|                       |                 |        |
|-----------------------|-----------------|--------|
| Colombo,              | 2 cks.          | 18     |
| Dusseldorf,           | 2               | 24     |
| Natal,                | 1               | 24     |
| Normanton,            | 1 cs.           | 7      |
| Genoa,                | 11              | 24     |
| Penang,               | 4               | 4      |
| Reval,                | 2 10            | 21     |
| <b>Coal Products—</b> |                 |        |
| <b>Alizarine</b>      |                 |        |
| Boston,               | 50 cks.         | £24    |
| Lyttleton,            | 6               | 191    |
| <b>Aniline Dyes</b>   |                 |        |
| Calcutta,             | 3 pks.          | £40    |
| <b>Aniline Oil</b>    |                 |        |
| Dunkirk,              | 10 dms.         | £130   |
| New York,             | 18              | £40    |
| <b>Aniline Salts</b>  |                 |        |
| Dunkirk,              | 10 cks.         | £20    |
| <b>Anthracene</b>     |                 |        |
| Dusseldorf,           | 208 cks.        | £1,041 |
| <b>Benzine</b>        |                 |        |
| Melbourne,            | 20 crts.        | £21    |
| <b>Benzol</b>         |                 |        |
| Amsterdam,            | 73 cks. 26 dms. | £104   |
| Rotterdam,            | 150             | £20    |
| Hamburg,              | 25 mltls.       | 104    |
| <b>Creosote</b>       |                 |        |
| Dieppe,               | 23,500 galls.   | £127   |
| New York,             | 2 cs.           | 21     |



|                                    |         |  |  |
|------------------------------------|---------|--|--|
| <b>Soot Oil</b>                    |         |  |  |
| ad, 30 brls.                       | £18     |  |  |
| tha                                |         |  |  |
| ne, 4 cks.                         | £5      |  |  |
| thaline                            |         |  |  |
| al, 35 brls.                       | £45     |  |  |
| rg, 73 cks. 10 bgs.                | 147     |  |  |
|                                    | 31      |  |  |
|                                    | 15      |  |  |
| ork, 88                            | 84      |  |  |
| re, 1,650 bgs.                     | £302    |  |  |
| p, 510 t.                          | 778     |  |  |
| ria, 200 brls.                     | 75      |  |  |
| k, 575 bgs.                        | 120     |  |  |
| id, 308                            | 250     |  |  |
|                                    | 488     |  |  |
|                                    | 8 cs.   |  |  |
| ay Is., 930                        | 1,535   |  |  |
| les, 509                           | 107     |  |  |
| ork, 710 dms.                      | £45     |  |  |
| ury, 20 5 brls.                    | 6       |  |  |
| ol                                 |         |  |  |
| lam, 50 rmls.                      | £150    |  |  |
| rg, 75 cks.                        | 259     |  |  |
| <b>Products (otherwise undes.)</b> |         |  |  |
| al, 4 cs.                          | £14     |  |  |
| n, 10 dms.                         | 27      |  |  |
| <b>Sulphate</b>                    |         |  |  |
| ax, 17 t. 10 c.                    | £322    |  |  |
|                                    | 65      |  |  |
|                                    | 1,194   |  |  |
|                                    | 10      |  |  |
|                                    | 185     |  |  |
|                                    | 22 10   |  |  |
|                                    | 12 10   |  |  |
|                                    | 52 13   |  |  |
|                                    | 35      |  |  |
|                                    | 5 15    |  |  |
|                                    | 100     |  |  |
| <b>as</b>                          |         |  |  |
| ve Sublimate—                      |         |  |  |
| a, 3 cs.                           | £21     |  |  |
| <b>of Tartar</b>                   |         |  |  |
| rgill, 5 c.                        | £27     |  |  |
| ma, 1 t. 10                        | 10      |  |  |
|                                    | 2       |  |  |
| tle, 10                            | 50      |  |  |
| urch, 15                           | 68      |  |  |
| ton, 10                            | 47      |  |  |
| te, 4 5                            | 397     |  |  |
| <b>ctants</b>                      |         |  |  |
| 2 cs.                              | £13     |  |  |
| ton, 2                             | 14      |  |  |
| ie, 20 pks.                        | 36      |  |  |
|                                    | 10 cks. |  |  |
| a, 50 dms.                         | 46      |  |  |
| rg, 25                             | 125     |  |  |
|                                    | 9       |  |  |
| rne, 13                            | 25      |  |  |
| <b>uoric Acid</b>                  |         |  |  |
| don, 4 cs.                         | £20     |  |  |
| <b>d</b>                           |         |  |  |
| d, 155 t. 5 c.                     | £539    |  |  |
|                                    | 5       |  |  |
| a, 55 15                           | 302     |  |  |
| ly, 17                             | 52      |  |  |
| a, 18 5                            | 180     |  |  |
|                                    | 20      |  |  |
|                                    | 112     |  |  |
| p, 300                             | 1,200   |  |  |
| burg, 91 10                        | 210     |  |  |
| lam, 9 9                           | 60      |  |  |
| io, 10                             | 70      |  |  |
| ique, 69                           | 589     |  |  |
| ersburg, 10                        | 30      |  |  |
| oes, 50 15                         | 375     |  |  |
|                                    | 140 7   |  |  |
|                                    | 101 14  |  |  |
|                                    | 8       |  |  |
| <b>acid</b>                        |         |  |  |
| ic, 5 c.                           | £10     |  |  |
| <b>Acid</b>                        |         |  |  |
| ar, 1 ck.                          | £10     |  |  |
| <b>orus</b>                        |         |  |  |
| rne, 9 c.                          | £102    |  |  |
| le, 9                              | 97      |  |  |
| abeth, 4                           | 48      |  |  |
| ton, 19 c.                         | £46     |  |  |
| rne, 19                            | 46      |  |  |
| <b>um Carbonate</b>                |         |  |  |
| le, 1 t. 3 c.                      | £18     |  |  |
| <b>um Chlorate</b>                 |         |  |  |
| s, 4 c.                            | £9      |  |  |
| <b>um Cyanide</b>                  |         |  |  |
| ville, 5 t. 9 c.                   | £569    |  |  |
| nton, 3 16                         | 422     |  |  |
| Janeiro, 1 12                      | 254     |  |  |
| <b>re</b>                          |         |  |  |
| Janeiro, 1 t. 6 c.                 | £31     |  |  |
|                                    | 8 10    |  |  |
| don, 8                             | 10      |  |  |

|                               |            |  |  |
|-------------------------------|------------|--|--|
| Oporto, 1 17                  | 38         |  |  |
| Santos, 2 10                  | 59         |  |  |
| Aracaju, 2 10                 | 58         |  |  |
| Pt. Elizabeth, 2 11           | 12         |  |  |
| <b>Salts of Soda and Lime</b> |            |  |  |
| Toronto, 10 cs. 10 kgs.       | £255       |  |  |
| <b>Sheep Dip</b>              |            |  |  |
| B. Ayres, 122 dms.            | £50        |  |  |
| Calcutta, 25                  | 7          |  |  |
| Stettin, 30 cs.               | 125        |  |  |
| <b>Soda</b>                   |            |  |  |
| Algoa Bay, 10 t. 18 c.        | £24        |  |  |
| Pt. Elizabeth, 4 2            | 10         |  |  |
| <b>Soda Alkali</b>            |            |  |  |
| Gibraltar, 10 c.              | £6         |  |  |
| <b>Soda Ash</b>               |            |  |  |
| Lyttleton, 5 t. 14 c.         | £20        |  |  |
| <b>Soda Crystals</b>          |            |  |  |
| Singapore, 10 cs.             | £9         |  |  |
| Piraeus, 1 t. 13 c.           | 6          |  |  |
| Adelaide, 10 11               | 24         |  |  |
| <b>Soda Salts</b>             |            |  |  |
| New York, 8 t. 15 c.          | £150       |  |  |
| <b>Sodium Acetate</b>         |            |  |  |
| Melbourne, 2 cks.             | £15        |  |  |
| <b>Sodium Bicarbonate</b>     |            |  |  |
| Demerara, 1 t.                | £7         |  |  |
| <b>Sodium Silicate</b>        |            |  |  |
| Wanganui, 4 t. 2 c.           | £21        |  |  |
| <b>Sodium Sulphate</b>        |            |  |  |
| Ghent, 115 t.                 | £115       |  |  |
| <b>Strontium Nitrate</b>      |            |  |  |
| New York, 7 t. 5 c.           | £173       |  |  |
| Madras, 45 kgs.               | 69         |  |  |
| <b>Sulphur</b>                |            |  |  |
| Madeira, 7 t. 7 c.            | £70        |  |  |
| Lisbon, 400 brls.             | 278        |  |  |
| Algoa Bay, 4 9                | 90 kgs. 73 |  |  |
| Pt. Elizabeth, 2 5            | 15         |  |  |
| Barbadoes, 6                  | 37         |  |  |
| <b>Sulphuric Acid</b>         |            |  |  |
| Algoa Bay, 4 t. 10 c.         | £26        |  |  |
| Cape Town, 2 5                | 21         |  |  |
| Penang, 5 10                  | 14 cs. 35  |  |  |
| <b>Tartaric Acid</b>          |            |  |  |
| Fremantle, 8 c.               | £53        |  |  |
| Cape Town, 6                  | 35         |  |  |
| Adelaide, 2 t. 16             | 347        |  |  |
| Montreal, 7                   | 39         |  |  |
| Melbourne, 1 ck.              | 5          |  |  |

## LIVERPOOL.

Week ending April 29th.

|                           |         |  |  |
|---------------------------|---------|--|--|
| <b>Albumen</b>            |         |  |  |
| New York, 2 t. 3 c.       | £240    |  |  |
| Boston, 4                 | 28      |  |  |
| <b>Alkali Waste</b>       |         |  |  |
| Stettin, 11 t. 4 c.       | £29     |  |  |
| <b>Alum</b>               |         |  |  |
| Tripoli, 3 t. 5 c.        | £17     |  |  |
| Larnaca, 1 9              | 7       |  |  |
| Montreal, 11 12           | 3 q. 60 |  |  |
| Toronto, 3 12             | 1 20    |  |  |
| Galatz, 1 7               | 1 6     |  |  |
| Port Lagos, 1 19          | 2 7     |  |  |
| Varna, 2 15               | 1 13    |  |  |
| Oporto, 5 7               | 1 24    |  |  |
| M. Video, 7 5             | 33      |  |  |
| Carril, 2 14              | 3 14    |  |  |
| Seville, 2 1              | 10      |  |  |
| <b>Alumina Sulphate</b>   |         |  |  |
| Montreal, 10 t. 2 c.      | £17     |  |  |
| <b>Ammonium Carbonate</b> |         |  |  |
| Bahia, 2 c. 2 q.          | £6      |  |  |
| Marseilles, 14            | 26      |  |  |
| St. Petersburg, 28 t. 15  | 1,185   |  |  |
| Odessa, 2 9               | 87      |  |  |
| Vigo, 1 12                | 10      |  |  |
| Carril, 1                 | 29      |  |  |
| Bilbao, 2                 | 84      |  |  |
| Corunna, 10               | 15      |  |  |
| <b>Ammonium Chloride</b>  |         |  |  |
| Yokohama, 10 c.           | £12     |  |  |
| Leghorn, 10               | 10      |  |  |
| Kurrachee, 1 t. 10        | 56      |  |  |
| Carril, 2                 | 4       |  |  |
| <b>Ammonium Sulphate</b>  |         |  |  |
| Tournay Char. nte, 150 t. | £1,200  |  |  |
| San Francisco, 9 t. 18 c. | 3 q. 83 |  |  |
| Castellon, 67 13          | 532     |  |  |
| Rio de Janeiro, 1 18      | 6 18    |  |  |
| Barcelona, 10 1           | 1 85    |  |  |
| Rouen, 10 6               | 1 85    |  |  |
| Valencia, 130 2           | 4 1,074 |  |  |
| Las Palmas, 15            | 121     |  |  |
| Palermo, 15               | 122     |  |  |
| <b>Barium Chloride</b>    |         |  |  |
| Carril, 2 c.              | £10     |  |  |

## Bleaching Powder—

|                    |  |  |  |
|--------------------|--|--|--|
| Baltimore, 76 cks. |  |  |  |
| Boston, 187        |  |  |  |
| Genoa, 17          |  |  |  |
| Ghent, 63          |  |  |  |
| La Chute, 23       |  |  |  |
| Leghorn, 59        |  |  |  |
| Lisbon, 40         |  |  |  |
| Montreal, 93       |  |  |  |
| New York, 234      |  |  |  |
| Oporto, 18         |  |  |  |
| Philadelphia, 25   |  |  |  |
| San Sebastian, 55  |  |  |  |

## Boracic Acid—

|                         |     |  |  |
|-------------------------|-----|--|--|
| Antwerp, 1 t. 3 c. 2 q. | £39 |  |  |
| Melbourne, 1 10         | 50  |  |  |

## Borax—

|                      |          |  |  |
|----------------------|----------|--|--|
| Barcelona, 5 t. 3 c. | £103     |  |  |
| Amsterdam, 3 4       | 64       |  |  |
| Tampico, 8           | 9        |  |  |
| New York, 5          | 14       |  |  |
| Stockholm, 9 6       | 1 q. 197 |  |  |
| Norrkoping, 1 2      | 22       |  |  |
| Rotterdam, 8 3       | 165      |  |  |
| Passages, 2 8        | 48       |  |  |
| Piraeus, 2           | 2        |  |  |
| Sydney, 15           | 16       |  |  |
| Montreal, 4 19       | 90       |  |  |
| Melbourne, 3 5       | 69       |  |  |
| Seville, 4           | 73       |  |  |

## Calcium Chloride—

|                      |     |  |  |
|----------------------|-----|--|--|
| Brisbane, 4 t. 19 c. | £11 |  |  |
|----------------------|-----|--|--|

## Carbolic Acid—

|                    |           |  |  |
|--------------------|-----------|--|--|
| Odessa, 69 t. 4 c. | 1 q. £374 |  |  |
| Hamburg, 10 7      | 531       |  |  |
| Baltimore 5 cs.    | 20        |  |  |
| Philadelphia, 11   | 235       |  |  |
| Genoa, 19 3        | 62        |  |  |

## Caustic Potash—

|                 |    |  |  |
|-----------------|----|--|--|
| Leghorn, 7 c.   | £9 |  |  |
| Hamburg, 7      | 9  |  |  |
| Dunedin, 1 t. 6 | 34 |  |  |

## Caustic Soda—

|                    |        |  |  |
|--------------------|--------|--|--|
| Acacutla, 70 dms.  |        |  |  |
| Alexandria, 21     |        |  |  |
| Algoa Bay, 6       |        |  |  |
| Barcelona, 232     |        |  |  |
| Beyrout, 35        |        |  |  |
| Bordeaux, 22       |        |  |  |
| Brisbane, 7        |        |  |  |
| B. Ayres, 100      |        |  |  |
| Calcutta, 34       |        |  |  |
| Ceara, 30          |        |  |  |
| Corral, 15         |        |  |  |
| Dunedin, 7 pks.    | 2 bxs. |  |  |
| Fairwater, 4       |        |  |  |
| Galatz, 170        |        |  |  |
| Genoa, 257         |        |  |  |
| Hamburg, 210       |        |  |  |
| Honolulu, 20       |        |  |  |
| Konigsberg, 18     |        |  |  |
| Leghorn, 108       |        |  |  |
| Lisbon, 320        |        |  |  |
| Madeira, 35        |        |  |  |
| Malaga, 89         |        |  |  |
| Manzanilla, 20     |        |  |  |
| Maracaibo, 10      |        |  |  |
| Melbourne, 57      |        |  |  |
| Messina, 34        |        |  |  |
| M. Video, 100      |        |  |  |
| Montreal, 445      |        |  |  |
| N. Orleans, 40     |        |  |  |
| New York, 340      |        |  |  |
| Odessa, 286        |        |  |  |
| Oporto, 30         |        |  |  |
| Parnahyba, 30      |        |  |  |
| Parnahyba, 30      |        |  |  |
| Passages, 325      |        |  |  |
| Philadelphia, 325  |        |  |  |
| Portland, Or., 25  |        |  |  |
| Port Natal, 10     |        |  |  |
| Puerto Cabello, 18 |        |  |  |
| Quebec, 125        |        |  |  |
| Kangoon, 15        |        |  |  |
| Rio de Janeiro, 40 |        |  |  |
| Rotterdam, 20      |        |  |  |
| San Francisco, 200 |        |  |  |
| San Sebastian, 60  |        |  |  |
| Santander, 15      |        |  |  |
| Santos, 25         |        |  |  |
| Seville, 251       |        |  |  |
| Singapore, 20      |        |  |  |
| Sydney, 77         |        |  |  |
| Tampico, 438       |        |  |  |
| Tripoli, 7         |        |  |  |

## Chemicals (otherwise undescribed)

|                     |         |  |  |
|---------------------|---------|--|--|
| Beyrout, 1 t. 10 c. | £55     |  |  |
| Calcutta, 55 7      | 161     |  |  |
| Odessa, 8           | 252     |  |  |
| Hamburg, 10         | 17      |  |  |
| Gothenburg, 14      | 24      |  |  |
| Montreal, 10 14     | 1 q. 59 |  |  |
| Copenhagen, 7       | 13      |  |  |
| Rotterdam, 16       | 28      |  |  |

|                                         |                       |        |          |         |
|-----------------------------------------|-----------------------|--------|----------|---------|
| Smyrna,                                 | 1                     |        |          | 37      |
| Boston,                                 | 1                     | 17     |          | 139     |
| <b>China Clay—</b>                      |                       |        |          |         |
| Barcelona,                              | 20 t.                 |        |          |         |
| Bombay,                                 |                       |        | 52 cks.  |         |
| Boston,                                 | 1,245                 |        |          |         |
| Calcutta,                               | 20                    |        |          |         |
| Genoa,                                  | 20                    |        |          |         |
| Philadelphia,                           | 230                   |        |          |         |
| Sydney,                                 | 30                    |        |          |         |
| <b>Chromium Trioxide—</b>               |                       |        |          |         |
| Antwerp,                                | 1 c.                  |        |          | £6      |
| <b>Citric Acid—</b>                     |                       |        |          |         |
| Montreal,                               | 4 c.                  |        |          | £31     |
| <b>Coal Products—</b>                   |                       |        |          |         |
| <b>Aniline Dyes</b>                     |                       |        |          |         |
| Rio de Janeiro,                         | 3 pks.                |        |          |         |
| <b>Aniline Oil</b>                      |                       |        |          |         |
| Barcelona,                              | 23 cks.               |        |          |         |
| Genoa,                                  | 2 dms.                |        |          |         |
| <b>Aniline Salt</b>                     |                       |        |          |         |
| Boston,                                 | 96 cks. 3 kgs. 45 cs. |        |          |         |
| Genoa,                                  | 10                    |        |          |         |
| Piræus,                                 | 15                    |        |          |         |
| <b>Pitch</b>                            |                       |        |          |         |
| Cette,                                  | 129 t. 5 c.           |        |          |         |
| Salonica,                               | 50 brls.              |        |          |         |
| <b>Tar</b>                              |                       |        |          |         |
| Galatz,                                 | 150 brls.             |        |          |         |
| Ibrail,                                 | 70 10 bxs.            |        |          |         |
| Oporto,                                 | 5 cs.                 |        |          |         |
| Philadelphia,                           | 150                   |        |          |         |
| <b>Coal Products—(otherwise undes.)</b> |                       |        |          |         |
| New York,                               | 18 cks. 1 kg.         |        |          |         |
| <b>Copper Sulphate—</b>                 |                       |        |          |         |
| Leghorn,                                | 9 t. 18 c.            |        |          | £186    |
| Messina,                                | 1 10                  |        |          | 377     |
| Odessa,                                 | 19 19                 | 3 q.   |          | 167     |
| Bari,                                   | 9 18                  |        |          | 2 34    |
| Messina,                                | 2 7                   | 2      |          | 228     |
| Oporto,                                 | 14 16                 | 2      |          | 8       |
| Salonica,                               | 9 1                   |        |          | 35      |
| Vigo,                                   | 1 17                  |        |          | 94      |
| Bilbao,                                 | 5 3                   |        |          | 673     |
| Leghorn,                                | 40 5                  | 1      |          | 10,956  |
| Bordeaux,                               | 682 14                | 5      |          | 574     |
| Trieste,                                | 30 18                 |        |          | 1,073   |
| Genoa,                                  | 63 15                 | 4      |          | 320     |
| Ancona,                                 | 19 10                 | 2      |          | 893     |
| Venice,                                 | 52 2                  | 8      |          | 2,895   |
| Marseilles,                             | 179 2                 | 1      |          | 236     |
| Paris,                                  | 14 15                 |        |          | 3 1,354 |
| Nantes,                                 | 93 8                  | 3      |          | 3,185   |
| Cette,                                  | 192 12                |        |          | 67      |
| M. Video,                               | 4 10                  |        |          | 5 1,669 |
| Naples,                                 | 96 18                 | 5      |          | 1 493   |
| Lisbon,                                 | 25                    | 1      |          |         |
| <b>Copperas—</b>                        |                       |        |          |         |
| Galatz,                                 | 2 t. 5 c.             |        |          | £6      |
| <b>Disinfectants—</b>                   |                       |        |          |         |
| New York,                               | 19 c.                 | 1 q.   |          | £18     |
| <b>Gypsum—</b>                          |                       |        |          |         |
| New York,                               | 36 t. 7 c.            |        |          | £118    |
| <b>Lime—</b>                            |                       |        |          |         |
| Madeira,                                | 10 t.                 |        |          | £17     |
| <b>Magnesium Sulphate—</b>              |                       |        |          |         |
| Carril,                                 | 1 t. 1 c.             |        |          | £5      |
| Portland, Or.,                          | 10 kgs.               |        |          |         |
| <b>Salot—</b>                           |                       |        |          |         |
| Accra,                                  |                       |        | 1 cs.    |         |
| Alexandria,                             | 2 cks.                |        |          |         |
| Antwerp,                                | 32 24 kgs.            |        |          |         |
| Barranquilla,                           | 2                     |        |          |         |
| Beyrout,                                | 30 20                 |        |          |         |
| Bilbao,                                 | 70 dms.               |        |          |         |
| Calcutta,                               | 20 139                |        |          |         |
| Demerara,                               | 5 2 190               |        |          |         |
| Gd. Canary,                             | 2                     |        |          |         |
| Hamburg,                                |                       |        | 2        |         |
| Havre,                                  | 7                     |        | 2        |         |
| Lagos,                                  | 1 98                  |        |          |         |
| Manaos,                                 | 14                    |        |          |         |
| M. Video,                               | 5 dms.                |        |          |         |
| New York,                               | 129 50                |        |          |         |
| Panama,                                 | 20                    |        |          |         |
| Pernambuco,                             |                       |        | 11 brls. |         |
| Phil adelphia,                          |                       |        | 6 cs.    |         |
| Pisco,                                  | 2                     |        |          |         |
| Pt Said,                                |                       | 10     |          |         |
| St. John's, Nfld.,                      | 16                    |        |          |         |
| Santander,                              | 25                    |        |          |         |
| Seville,                                |                       |        | 11       |         |
| Sourabaya,                              |                       |        | 4 dms.   |         |
| Taltal,                                 | 11                    |        |          |         |
| <b>Painters' Colours—</b>               |                       |        |          |         |
| Axim,                                   |                       | 2 kgs. |          |         |
| Barbadoes,                              | 1 dm.                 | 2      |          |         |



|                              |         |                                 |                        |         |                             |                            |                   |
|------------------------------|---------|---------------------------------|------------------------|---------|-----------------------------|----------------------------|-------------------|
| Barcelona, 299 brls. 80      | 3 cks.  | <b>Salt Cake—</b>               | Baltimore, 361 t. 3 c. | £4 64   | San Francisco, 66 tcs.      | <b>Sodium Sulphate—</b>    | Montreal, 20 cks. |
| Bourgas, 1 bx.               |         |                                 | Genoa, 10 2            | 18      | Singapore, 35               | <b>Starch—</b>             |                   |
| B. Ayres, 103 dms.           |         |                                 | Antwerp, 50 2          | 108     | Sourabaya, 10               | St. John's, N'd., 12 cs.   |                   |
| Calcutta, 10 brls.           |         | <b>Saltpetre—</b>               |                        |         | Sydney, 326                 | <b>Strontia—</b>           |                   |
| Cameroons, 2 cks.            |         | Maranhão, 5 c.                  | 3 q.                   | £7      | Venice, 120                 | Hamburg, 200 t. 8 c.       | £4                |
| Dantzig, 200 bgs.            |         | Pernambuco, 2 t. 18             |                        | 71      | Yokohama, 397               | <b>Sulphur—</b>            |                   |
| Dunedin, 15                  |         | <b>Sheep Dip—</b>               |                        |         | Alexandria, 50 brls.        | Constantinople, 25 t. 1 c. |                   |
| E. London, 25                |         | Valparaíso, 3 t. 16 c.          | 3 q.                   | £4 34   | Boston, 140                 | Montreal, 15               |                   |
| Fernando, 30 dms.            |         | B. Ayres, 8 18                  | 2                      | 250     | Calcutta, 33 kgs.           | Boston, 250 7              |                   |
| Galatz, 280                  |         | <b>Soap—</b>                    |                        |         | Hamburg, 2 cks.             | Quebec, 1 1 1 q.           |                   |
| Genoa, 6                     |         | Accra, 200 bxs.                 |                        |         | Jaffa, 10                   | Trinidad, 6 18             |                   |
| Gibraltar, 1                 | 37 pks. | Akassa, 54                      |                        |         | Lisbon, 6 cs.               | <b>Sulphuric Acid—</b>     |                   |
| Gothenburg, 1                |         | Alexandria, 180                 |                        |         | Malta, 40 30                | New York, 1 t. 1 c. 1 q.   |                   |
| Halifax, 3 15                | 45 cs.  | Algoa Bay, 600                  | 30 cs.                 | 10 bds. | M. Video, 67                | <b>Superphosphates—</b>    |                   |
| Guayaquil, 40 dms.           |         | Assinee, 76                     |                        |         | Montreal, 25 bgs.           | Valencia, 90 t. 17 c. 3 q. | £4                |
| Hamburg, 1                   | 7       | Barbadoes, 200                  |                        |         | New York, 280               | Nantes, 49 4 1             |                   |
| Hankow, 16                   | 76      | Barranquilla, 5                 |                        |         | Philadelphia, 420 84 327    | <b>Varnish—</b>            |                   |
| Ibrail, 12 brls.             |         | Bombay, 45                      |                        |         | Quebec, 15                  | Cabenda, 20 brls.          |                   |
| Leghorn, 16                  |         | B. Ayres, 2                     |                        |         | Rosario, 100                | Cadiz, 8                   |                   |
| Limon, 4                     |         | Calcutta, 250                   |                        |         | S. John's, N'd., 40 10      | Pt. Said, 1                |                   |
| Lisbon, 20                   | 2 pks.  | Cape Coast, 225                 |                        |         | Trinidad, 14                | St. John's, N'd., 3 cs.    |                   |
| Manaos, 9                    |         | Cape Town, 4,812 1,615          |                        |         | <b>Soda Oxide—</b>          | Taitai, 4                  |                   |
| Marseilles, 27               |         | Cameroons, 50                   |                        |         | New York, 10 cs.            | Valencia, 2 dms.           |                   |
| Melbourne, 14                |         | Constantinople, 20              |                        |         | <b>Sodium Acetate—</b>      | Yokohama, 9                |                   |
| Maranhão, 5                  | 8 cs.   | Demerara, 400                   |                        |         | Genoa, 15 cks.              | <b>Verdigris—</b>          |                   |
| M. Video, 5 brls 22          |         | Durban, 210                     |                        |         | <b>Sodium Bicarbonate—</b>  | Tampico, 1 c               |                   |
| Odessa, 9 290                |         | E. London, 975 40               |                        |         | Adelaide, 5 cks.            | <b>White Lead—</b>         |                   |
| Oporto, 1                    |         | Elmira, 82                      |                        |         | Amsterdam, 40 kgs. 2        | Trinidad, 4 cks.           |                   |
| Para, 8 25 tcs 69 3          |         | Genoa, 34                       |                        |         | Ancona, 60                  | <b>Zinc Chloride—</b>      |                   |
| Progresso, 10 cks.           |         | Gibraltar, 145                  |                        |         | Antwerp, 30                 | Boston, 1 t. 7 c.          |                   |
| Rio de Janeiro, 20           |         | Gd. Bassam, 150                 |                        |         | Auckland, 40                | Maranham, 18               |                   |
| St. John's, N'd., 58         |         | Hamburg, 40                     |                        |         | Barcelona, 80               |                            |                   |
| <b>Paraffin Wax—</b>         |         | Hong Kong, 533                  |                        |         | Bombay, 20                  |                            |                   |
| Parnabyba, 25 cs.            |         | Kingston, 1,360                 |                        |         | Bordeaux, 34                |                            |                   |
| Pernambuco, 10               |         | Kurrachee, 529 30               |                        |         | Brisbane, 264               |                            |                   |
| <b>Potash Salts—</b>         |         | Lagos, 5 2 10 pks.              |                        |         | Calcutta, 1,607             |                            |                   |
| Rouen, 1 t.                  | £70     | Manaos, 150                     |                        |         | Catania, 40 bgs.            |                            |                   |
| <b>Potassium Bichromate—</b> |         | Monrovia, 60                    |                        |         | Copenhagen, 200 20          |                            |                   |
| Palermo, 9 c.                | £20     | Montreal, 500                   |                        |         | Dedegatch, 8 12 6           |                            |                   |
| M. Video, 10                 | 21      | Montserrat, 50                  |                        |         | Dunedin, 60                 |                            |                   |
| Salonica, 7 2 q.             | 15      | Mosel Bay, 300                  |                        |         | E. London, 20 15 bxs.       |                            |                   |
| Vera Cruz, 10                | 21      | New York, 142                   | 5 brls.                |         | Genoa, 70 15                |                            |                   |
| <b>Potassium Bromate—</b>    |         | Palermo, 800                    | 1                      |         | Ghent, 15 8                 |                            |                   |
| Lisbon, 1 c.                 | £56     | Para, 5                         |                        |         | Gibraltar, 40               |                            |                   |
| <b>Potassium Carbonate—</b>  |         | Patras, 5                       |                        |         | Gothenburg, 110 12          |                            |                   |
| Corunna, 6 c. 1 q.           | £8      | Penang, 5                       |                        |         | Hamburg, 500                |                            |                   |
| <b>Potassium Chlorate—</b>   |         | Pt. Natal, 1,246 10 9 bds.      |                        |         | Hioho, 100                  |                            |                   |
| Kobe, 2 t.                   | £90     | Pt. Said, 11                    |                        |         | Hong Kong, 10               |                            |                   |
| Odessa, 2                    | 90      | Rangoon, 2                      |                        |         | Honolulu, 20                |                            |                   |
| Shanghai, 6 10 c.            | 258     | Rotterdam, 6 440                |                        |         | Lisbon, 100                 |                            |                   |
| Boston, 10                   | 387     | St. John's, N'd., 389           |                        |         | Malaga, 30 10 brls.         |                            |                   |
| Hioho, 2 10                  | 92      | St. Lucia, 180                  |                        |         | Malta, 20                   |                            |                   |
| New York, 33 15              | 1,311   | St. Kitts, 100                  |                        |         | Montreal, 725 50 bgs.       |                            |                   |
| Adelaide, 10                 | 18      | Salt Pond, 412                  |                        |         | Naples, 30                  |                            |                   |
| Konigsberg, 2 10             | 98      | Savannah, 20                    |                        |         | Newcastle, 130              |                            |                   |
| Bari, 1 10                   | 58      | Savanna, 8,070 10               |                        |         | N.S.W., 230                 |                            |                   |
| Oporto, 1                    | 40      | Shanghai, 8,070                 |                        |         | Newport News, 160           |                            |                   |
| Gutajewski, 9 10             | 490     | Sierra Leone, 424               |                        |         | New York, 20                |                            |                   |
| St. Petersburg, 95 10        | 3,763   | Singapore, 621                  |                        |         | Oporto, 20                  |                            |                   |
| Gothenburg, 4                | 164     | Smyrna, 22 100                  |                        |         | Paris, 132 6                |                            |                   |
| B. Ayres, 2                  | 78      | Sydney, 900 1                   |                        |         | Penang, 7                   |                            |                   |
| Philadelphia, 5              | 190     | Teneriffe, 735                  |                        |         | Portland, O., 50            |                            |                   |
| <b>Potassium Nitrate—</b>    |         | Trinidad, 900 1                 |                        |         | Pt. Natal, 40               |                            |                   |
| Vera Cruz, 5 c.              | £7      | Valparaíso, 20                  |                        |         | Quebec, 40                  |                            |                   |
| <b>Potassium Prussiate—</b>  |         | Venice, 20                      |                        |         | Kouen, 7 3                  |                            |                   |
| Montreal, 6 t. 4 c.          | £419    | Warri, 150                      |                        |         | St. John's, N'd., 10        |                            |                   |
| Hamburg, 2                   | 7       | <b>Soda Alkali—</b>             |                        |         | St. Petersburg, 1,625       |                            |                   |
| <b>Salt—</b>                 |         | Bilbao, 73 brls.                |                        |         | Salt Pond, 400              |                            |                   |
| Adelaide, 2 t. 8 c.          |         | Leghorn, 52                     |                        |         | San Francisco, 80           |                            |                   |
| Antwerp, 185                 |         | Lisbon, 160                     |                        |         | Seville, 46 24 brls.        |                            |                   |
| Baltimore, 500               |         | Melbourne, 160                  |                        |         | Smyrna, 20                  |                            |                   |
| Benin, 4                     |         | Odessa, 135                     |                        |         | Sydney, 350 10              |                            |                   |
| Boston, 500                  |         | Quebec, 120                     |                        |         | Teneriffe, 40 bgs.          |                            |                   |
| B. Ayres, 55 16              |         | Toronto, 35                     |                        |         | Toronto, 50                 |                            |                   |
| Isles De Los, 75             |         | Venice, 35                      |                        |         | Volo, 10 3                  |                            |                   |
| Kingston, 5                  |         | <b>Soda Ash—</b>                |                        |         | Wellington, 20 10           |                            |                   |
| Maranham, 53 11              |         | Baltimore, 704 bgs 43 tcs.      |                        |         | <b>Sodium Carbonate—</b>    |                            |                   |
| Newcastle, 44 17             |         | Barcelona, 44 cks               |                        |         | Bordeaux, 3 cs.             |                            |                   |
| N.S.W., 44                   |         | Beyrout, 8 10 brls.             |                        |         | Rotterdam, 50 brls.         |                            |                   |
| New York, 40                 |         | Bombay, 8                       |                        |         | <b>Sodium Chlorate—</b>     |                            |                   |
| Norrköping, 171 17           |         | Boston, 1,415 72 179 tcs.       |                        |         | Hamburg, 20 kgs.            |                            |                   |
| Philadelphia, 64             |         | Brisbane, 531                   |                        |         | St. Petersburg, 360         |                            |                   |
| Pt. Elizabeth, 9             |         | B. Ayres, 57 300 brls.          |                        |         | <b>Sodium Hyposulphate—</b> |                            |                   |
| Pt. Royal, 1,112             |         | Calcutta, 85 kgs.               |                        |         | Portland, Or., 50 kgs.      |                            |                   |
| Rangoon, 1,385               |         | Callao, 70                      |                        |         | <b>Sodium Nitrate—</b>      |                            |                   |
| Salt Pond, 25                |         | Corfu, 20                       |                        |         | St. John's, N'd., 8 bgs.    |                            |                   |
| San Francisco, 50            |         | Dunedin, 14                     |                        |         | <b>Sodium Silicate—</b>     |                            |                   |
| Savannah, 600                |         | E. London, 45                   |                        |         | Adelaide, 140 dms.          |                            |                   |
| Sierra Leone, 5              | 1 cs.   | Ghent, 50 bgs.                  |                        |         | Corfu, 5                    |                            |                   |
| Sydney, 560                  |         | Hamburg, 100 4                  |                        |         | Leghorn, 120 kgs.           |                            |                   |
| Trinidad, 120 10             |         | Hioho, 50                       |                        |         | Lisbon, 12 cks.             |                            |                   |
| Valparaíso, 5                |         | Kalmar, 110 25                  |                        |         | Malaga, 47                  |                            |                   |
| Walfisch Bay, 98 18          |         | Melbourne, 50                   |                        |         | Melbourne, 15               |                            |                   |
| Aalesund, 411                |         | M. Video, 14                    |                        |         | Montreal, 20 brls.          |                            |                   |
| Calcutta, 4,787              |         | Montreal, 590 27 7 tcs.         |                        |         | Newcastle, 15               |                            |                   |
| Cameroons, 25 2              |         | New York, 1,214 14 346          |                        |         | N.S.W., 15                  |                            |                   |
| Conakry, 25                  |         | Parnabyba, 3,076 39 10 brls.    |                        |         | Oporto, 20 15 bgs.          |                            |                   |
| Dunedin, 125                 |         | Philadelphia, 3,076 39 279 tcs. |                        |         | Piræus, 40                  |                            |                   |
| E. London, 9                 |         | Portland, O., 8                 |                        |         | Trinidad, 4                 |                            |                   |
| Ghent, 110                   |         | Puerto Cabello, 4               |                        |         | Valencia, 600               |                            |                   |
| Melbourne, 50                |         | Riga, 80                        |                        |         | Valparaíso, 20 20 brls.     |                            |                   |
| Montreal, 472 11             |         | Rio de Janeiro, 150 275 brls.   |                        |         | Bilbao, 15                  |                            |                   |
| Wellington, 75               |         | St. Petersburg, 792             |                        |         | Bombay, 3 bgs.              |                            |                   |
| Wilburg, 917                 |         |                                 |                        |         | Brisbane, 15                |                            |                   |
|                              |         |                                 |                        |         | Vigo, 15                    |                            |                   |

## MANCHESTER

Week ending April 20th.

|                                           |                       |
|-------------------------------------------|-----------------------|
| <b>Alum—</b>                              | Alexandretta, 50 cks. |
| <b>Aniline Colours—</b>                   |                       |
| Rotterdam, 2 cks.                         |                       |
| Hamburg, 2 kgs. 1 cs.                     |                       |
| <b>Aniline Oil—</b>                       |                       |
| Hamburg, 5 dms.                           |                       |
| <b>Aniline Salt—</b>                      |                       |
| Hamburg, 20 brls.                         | 4 pms.                |
| Rotterdam, 1 ck.                          |                       |
| <b>Benzol—</b>                            |                       |
| Rotterdam, 24 brls.                       |                       |
| <b>Bleaching Powder—</b>                  |                       |
| Rio de Janeiro, 6 cs.                     |                       |
| <b>Caustic Soda—</b>                      |                       |
| Jaffa, 3 dms.                             |                       |
| Rio de Janeiro, 8                         |                       |
| <b>Cottonseed Oil—</b>                    |                       |
| Tunis, 40 brls.                           |                       |
| <b>Dyestuffs (otherwise unclassified)</b> |                       |
| Rio de Janeiro, 5 cs.                     |                       |
| St. Petersburg, 2 dms.                    |                       |
| <b>Glue—</b>                              |                       |
| Antwerp, 20 cks.                          |                       |
| Rotterdam, 12                             |                       |
| <b>Linseed Oil—</b>                       |                       |
| Tunis, 8 brls.                            |                       |
| <b>Magnesium Chlorate—</b>                |                       |
| Bahia, 4 dms.                             |                       |
| <b>Magnesium Sulphate—</b>                |                       |
| Gothenburg, 40 bgs.                       |                       |
| <b>Mineral White—</b>                     |                       |
| Rio de Janeiro, 10 bgs.                   |                       |
| <b>Paraffin Wax—</b>                      |                       |
| Larnaca, 10 bgs.                          |                       |
| Hamburg, 10                               |                       |
| <b>Pitch—</b>                             |                       |
| Antwerp, 292 t.                           |                       |
| St. Malo, 1,258                           |                       |
| <b>Salt—</b>                              |                       |
| Rotterdam, 150 t.                         |                       |
| <b>Soda—</b>                              |                       |
| Rio de Janeiro, 2 cks.                    |                       |
| <b>Soda Ash—</b>                          |                       |
| Jaffa, 40 brls.                           |                       |
| <b>Soda Crystals—</b>                     |                       |
| Jerusalem, 13 brls.                       |                       |
| <b>Sodium Bicarbonate—</b>                |                       |
| Beyrout, 20 kgs.                          |                       |
| <b>Sulphuric Acid—</b>                    |                       |
| Rio de Janeiro, 28 cs.                    |                       |
| <b>Tar Salts—</b>                         |                       |
| Rotterdam, 4 cks.                         |                       |
| St. Petersburg, 95 pks.                   |                       |
| <b>Toluol—</b>                            |                       |
| Rotterdam, 65 dms.                        |                       |
| <b>Zinc Chloride—</b>                     |                       |
| Bahia, 8 cks.                             |                       |



**HULL.**

ending April 25th

|                         |             |
|-------------------------|-------------|
| 10 cks.                 |             |
| <b>Sulphate</b> —       |             |
| 125 bgs.                |             |
| 139                     |             |
| 70 cks.                 |             |
| <b>Powder</b> —         |             |
| 107 cks.                |             |
| <b>da</b> —             |             |
| 17 dms.                 |             |
| (otherwise undescribed) |             |
| 1 cs.                   |             |
| 2 cks.                  |             |
| 4 pks. 6                | 1,388 slbs. |
| 342                     |             |
| 150                     | 31          |
| 6 cks.                  | 145         |
| 74                      |             |
| 75                      |             |
| 1                       |             |
| 1 pk.                   |             |
| 20                      |             |
| 10 bgs.                 |             |
| 2,870 c.                |             |
| 2,646                   |             |
| 86                      |             |
| 420                     |             |
| 34                      |             |
| 155                     |             |
| 1,047                   |             |
| 1,208                   |             |
| 802                     |             |
| 206                     |             |
| 50 cks.                 |             |
| 25                      |             |
| (otherwise undescribed) |             |
| 2 cks.                  |             |
| 8                       |             |
| 1 ck.                   |             |
| 86 c.                   |             |
| 17                      |             |
| 202                     |             |
| 84                      |             |
| 35                      |             |
| 25                      |             |
| 18                      |             |
| 478                     |             |
| 104                     |             |
| 4                       |             |
| 652                     |             |
| 54                      |             |
| 70 t.                   |             |
| 79                      |             |
| <b>Colours</b> —        |             |
| 16 cks.                 | 1 pk.       |
| 63                      | 1 cs. 352   |
| 2 dms.                  |             |
| 2                       |             |
| 1                       | 9           |
| 9                       | 10 pks.     |
| 4                       |             |
| 4                       | 20 dms.     |
| 2                       |             |
| 6                       | 10 pks.     |
| 1                       |             |
| 17                      | 16          |
| 82                      |             |
| 3                       |             |
| 4                       | 24          |
| 39                      | 1 dm.       |
| 3                       |             |
| 260 t.                  |             |
| 1 cs.                   |             |
| 50                      |             |
| 27 cks.                 |             |
| 1                       |             |
| 20                      |             |
| 49 kgs.                 |             |
| 20 cks.                 |             |
| 4                       |             |
| 5                       |             |
| 5                       |             |
| 15                      |             |

|                  |              |
|------------------|--------------|
| Rotterdam,       | 11           |
| Stettin,         | 5            |
| Selzette,        | 120 t.       |
| <b>Varnish</b> — |              |
| Antwerp,         | 2 cks. 7 cs. |
| Christiania,     | 1            |
| Copenhagen,      | 3            |
| Dankirk,         | 1            |
| Drontheim,       | 5            |
| Gothenburg,      | 1            |
| Hamburg,         | 3            |
| Rotterdam,       | 2            |

**GLASGOW.**

Week ending April 30th.

|                                           |              |
|-------------------------------------------|--------------|
| <b>Alumina Sulphate</b> —                 |              |
| Dunedin,                                  | 31 t. 19½ c. |
| <b>Ammonia</b> —                          |              |
| Bombay,                                   | 6 c.         |
| <b>Ammonium Sulphate</b> —                |              |
| Barbadoes,                                | 51 t. 4¼ c.  |
| Trinidad,                                 | 176 5¼       |
| Java,                                     | 1            |
| <b>Benzine</b> —                          |              |
| France,                                   | £74          |
| <b>Bichrome</b> —                         |              |
| Antwerp,                                  | £148         |
| Dunedin,                                  | 16½ c.       |
| <b>Bleaching Powder</b> —                 |              |
| Calcutta,                                 | 25 t. 1 c.   |
| Dunedin,                                  | 10 19¼       |
| France,                                   | 5 17¾        |
| <b>Borax</b> —                            |              |
| Canada,                                   | £59          |
| <b>Caustic Soda</b> —                     |              |
| Dunedin,                                  | 25 t. 7 c.   |
| <b>Chemicals (otherwise undescribed)</b>  |              |
| Rotterdam,                                | 2 t. 15 c.   |
| <b>Coal Products</b> —                    |              |
| Creosote Oil                              | £1,136       |
| France,                                   |              |
| <b>Naphtha</b>                            | £68          |
| Paris,                                    | 59           |
| Dunedin,                                  |              |
| <b>Pitch</b>                              | £330         |
| Canada,                                   |              |
| France,                                   | 944          |
| Italy,                                    | 820          |
| U.S.A.,                                   | 145          |
| <b>Tar</b>                                |              |
| New Fairwater,                            | £300         |
| Bombay,                                   | 25           |
| <b>Coal Products (otherwise undes.)</b> — |              |
| Amsterdam,                                | 1 t. 4 c.    |
| Christiania,                              | £607         |
| <b>Copper Sulphate</b> —                  |              |
| France,                                   | qty.         |
| <b>Copperas</b> —                         |              |
| Bombay,                                   | £54          |
| <b>Dyestuffs (otherwise undescribed)</b>  |              |
| Rotterdam,                                | £62          |
| <b>Extracts</b> —                         |              |
| Gothenburg,                               | £45          |
| <b>Gelatine</b> —                         |              |
| Canada,                                   | £392         |
| Nova Scotia,                              | 73           |
| U.S.A.,                                   | 1,042        |
| Dunedin,                                  | 77           |
| <b>Guano</b> —                            |              |
| Guernsey,                                 | 14 t. 11 c.  |
| <b>Linseed Oil</b> —                      |              |
| Canada,                                   | 27 t. 17½ c. |
| Valparaiso,                               | 13 ¼         |
| Madras,                                   | 2 5          |
| Wellington,                               | 3 2½         |
| <b>Logwood</b> —                          |              |
| Pt. Lyttelton,                            | £51          |
| <b>Magnesium Sulphate</b> —               |              |
| St. Stephen,                              | £26          |
| <b>Manure</b> —                           |              |
| Demerara,                                 | 102 t.       |
| Rouen,                                    | 10           |
| <b>Paint</b> —                            |              |
| Colombo,                                  | £21          |
| Shanghai,                                 | 20           |
| <b>Painters' Colours</b> —                |              |
| Antwerp,                                  | £36          |
| Bombay,                                   | 86           |
| Canada,                                   | 105          |
| Montreal,                                 | qty.         |
| Valparaiso,                               | 300          |
| Rotterdam,                                | 8            |
| Calcutta,                                 | 65           |
| Singapore,                                | 26           |
| <b>Paraffin Wax</b> —                     |              |
| Paris,                                    | £36          |
| Amsterdam,                                | 12 t.        |
| Russia,                                   | 100          |

|                               |              |
|-------------------------------|--------------|
| Rotterdam,                    | 12 c.        |
| Stockholm,                    | 15¼          |
| Bombay,                       | 96           |
| Spain,                        | 147          |
| Stockholm,                    | 100          |
| <b>Phosphates</b> —           |              |
| Trinidad,                     | 40 t.        |
| <b>Phosphoric Acid</b> —      |              |
| Trinidad,                     | £167         |
| <b>Potassium Bichromate</b> — |              |
| Antwerp,                      | £396         |
| Bombay,                       | 395          |
| Paris,                        | 400          |
| Canada,                       | 99           |
| <b>Rosin Oil</b> —            |              |
| Amsterdam,                    | £20          |
| <b>Salt</b> —                 |              |
| Valparaiso,                   | 3 t. 17 c.   |
| <b>Sheep Dip</b> —            |              |
| Dunedin,                      | £275         |
| <b>Soap</b> —                 |              |
| Barbadoes,                    | 2 t. 14¼ c.  |
| Trinidad,                     | 8 8¼         |
| Valparaiso,                   | 1 10         |
| Colombo,                      | 1 11½        |
| <b>Soda Crystals</b> —        |              |
| Valparaiso,                   | 37 t.        |
| <b>Sodium Bichromate</b> —    |              |
| Nantes,                       | 5 t. 8¼ c.   |
| Paris,                        | 10 10¼       |
| Rouen,                        | 10 4¼        |
| Canada,                       | 2 14¼        |
| <b>Sulphuric Acid</b> —       |              |
| Demerara,                     | £50          |
| Colombo,                      | 35           |
| <b>Tartar</b> —               |              |
| Dunedin,                      | 11 c.        |
| <b>Treacle</b> —              |              |
| Gothenburg,                   | 31 t. 13¼ c. |
| Christiania,                  | 3 18½        |
| Stockholm,                    | 66 2         |

**TYNE.**

Week ending April 25th.

|                             |             |
|-----------------------------|-------------|
| <b>Alkali</b> —             |             |
| Gothenburg,                 | 5 t. 5 c.   |
| Rotterdam,                  | 18 6        |
| Hamburg,                    | 2 12        |
| Christiania,                | 6 3         |
| <b>Ammonium Carbonate</b> — |             |
| Barcelona,                  | 1 t.        |
| <b>Ammonium Chloride</b> —  |             |
| Barcelona,                  | 2 t. 3 c.   |
| <b>Antimony</b> —           |             |
| New York,                   | 45 t.       |
| Rotterdam,                  | 3           |
| Hamburg,                    | 3 10 c.     |
| Antwerp,                    | 1           |
| <b>Barium</b> —             |             |
| New York,                   | 2 t. 2 c.   |
| <b>Barium Bin oxide</b> —   |             |
| Barcelona,                  | 1 t. 7 c.   |
| <b>Barium Carbonate</b> —   |             |
| Hamburg,                    | 150 t.      |
| <b>Bleaching Powder</b> —   |             |
| Harlingen,                  | 10 t. 1 c.  |
| Gothenburg,                 | 45 7        |
| Copenhagen,                 | 10 2        |
| Rotterdam,                  | 20 16       |
| Trondhjem,                  | 10 2        |
| Horsens,                    | 1 10        |
| Hamburg,                    | 17 17       |
| Helsingfors,                | 89 9        |
| Antwerp,                    | 25 5        |
| Christiania,                | 36 18       |
| <b>Camphor</b> —            |             |
| Hamburg,                    | 1 c.        |
| <b>Caustic Soda</b> —       |             |
| New York,                   | 156 t. 4 c. |
| Gothenburg,                 | 4 18        |
| Seville,                    | 55 12       |
| Barcelona,                  | 18 11       |
| Copenhagen,                 | 10 16       |
| Aalborg,                    | 4 7         |
| Hamburg,                    | 60 16       |
| Helsingfors,                | 21 7        |
| Abo,                        | 15 13       |
| Antwerp,                    | 7 10        |
| Christiania,                | 11 2        |
| <b>Fluor Spar</b> —         |             |
| New York,                   | 160 t. 3 c. |
| <b>Glue</b> —               |             |
| Gothenburg,                 | 10 c.       |
| <b>Litharge</b> —           |             |
| Gothenburg,                 | 3 t. 12 c.  |
| Hamburg,                    | 1 7         |

|                   |            |
|-------------------|------------|
| <b>Magnesia</b> — |            |
| Barcelona,        | 4 t. 10 c. |
| Genoa,            | 7          |
| Hamburg,          | 1          |

|                        |      |
|------------------------|------|
| <b>Muriatic Acid</b> — |      |
| Esbjerg,               | 2 c. |

|                |       |
|----------------|-------|
| <b>Paint</b> — |       |
| New York,      | 17 t. |
| Gothenburg,    | 2 c.  |
| Rotterdam,     | 1 11  |
| Hamburg,       | 4 10  |
| Antwerp,       | 1     |

|                    |           |
|--------------------|-----------|
| <b>Rosin Oil</b> — |           |
| Rotterdam,         | 9 t. 1 c. |

|               |           |
|---------------|-----------|
| <b>Slag</b> — |           |
| Rotterdam,    | 9 t. 8 c. |

|               |            |
|---------------|------------|
| <b>Soda</b> — |            |
| Harlingen,    | 10 t. 3 c. |
| New York,     | 50 1       |
| Gothenburg,   | 9 18       |
| Esbjerg,      | 75 4       |
| Rotterdam,    | 2 17       |
| Helsingfors,  | 16 13      |
| Abo,          | 2 11       |
| Christiania,  | 10 3       |

|                   |             |
|-------------------|-------------|
| <b>Soda Ash</b> — |             |
| Gothenburg,       | 45 t. 10 c. |
| Bergen,           | 6           |
| Helsingfors,      | 13 3        |
| Hango,            | 7 3         |

|                              |            |
|------------------------------|------------|
| <b>Sodium Hyposulphite</b> — |            |
| New York,                    | 70 t. 6 c. |
| Genoa,                       | 5          |

|                          |            |
|--------------------------|------------|
| <b>Sodium Sulphate</b> — |            |
| Gothenburg,              | 50 t. 2 c. |

|                  |       |
|------------------|-------|
| <b>Sulphur</b> — |       |
| Gothenburg,      | 55 t. |
| Christiania,     | 350   |

|                     |       |
|---------------------|-------|
| <b>White Lead</b> — |       |
| New York,           | 5 t.  |
| Abo,                | 11 c. |

**GOOLE.**

Week ending April 22nd.

|                                           |               |
|-------------------------------------------|---------------|
| <b>Benzol</b> —                           |               |
| Boulogne,                                 | 74 cks.       |
| Rotterdam,                                | 11            |
| <b>Chemicals (otherwise undescribed)</b>  |               |
| Amsterdam,                                | 2 cks.        |
| Ghent,                                    | 2 1 cs.       |
| Rotterdam,                                | 200           |
| <b>Coal Products (otherwise undes.)</b> — |               |
| Antwerp,                                  | 28 cks. 1 cs. |
| Boulogne,                                 | 53            |
| Ghent,                                    | 1             |
| Hamburg,                                  | 25 1 50 bgs.  |
| Rotterdam,                                | 107           |
| <b>Colours</b> —                          |               |
| Amsterdam,                                | 6 cks.        |
| Boulogne,                                 | 3 4 cs.       |
| Rotterdam,                                | 3             |
| <b>Dyestuffs (otherwise undescribed)</b>  |               |
| Ghent,                                    | 86 bgs.       |
| Hamburg,                                  | 7 cks.        |
| <b>Manure</b> —                           |               |
| Dunkirk,                                  | 200 bgs.      |
| <b>Pitch</b> —                            |               |
| Antwerp,                                  | 562 t.        |
| Dunkirk,                                  | 75            |
| <b>Soap</b> —                             |               |
| Antwerp,                                  | 11 cs.        |

**GRIMSBY.**

Week ending April 25th.

|                                           |                     |
|-------------------------------------------|---------------------|
| <b>Alkali</b> —                           |                     |
| Hamburg,                                  | 10 cs.              |
| <b>Chemicals (otherwise undescribed)</b>  |                     |
| Hamburg,                                  | 8 pks.              |
| <b>Coal Products (otherwise undes.)</b> — |                     |
| Dieppe,                                   | 112 cks.            |
| Esbjerg,                                  | 1                   |
| Hamburg,                                  | 1 cs. 15 pks.       |
| Rotterdam,                                | 106                 |
| <b>Colours</b> —                          |                     |
| Dieppe,                                   | 13 cks. 1 cs. 1 dm. |
| Malmö,                                    | 22                  |
| Rotterdam,                                | 1                   |
| <b>Dyestuffs (otherwise undescribed)</b>  |                     |
| Dieppe,                                   | 3 cks. 2 cs.        |



## PRICES CURRENT.

WEDNESDAY, MAY 6TH, 1896.

PREPARED BY MESSRS. HIGGINBOTTOM AND CO., 116, PORTLAND STREET, MANCHESTER.

The values stated are F.O.R. at maker's works, or at usual ports of shipment in U.K. The price in different localities may vary.

| Acids:—                                            |                   | £ s. d.      |  |
|----------------------------------------------------|-------------------|--------------|--|
| Acetic, 25 % and 40 %                              | per cwt.          | 6/ 8 9/-     |  |
| Glacial                                            |                   | 40/-         |  |
| Arsenic S.G., 2000°                                |                   | 1 2 0        |  |
| Fluoric                                            | per lb.           | 0 0 3 1/4    |  |
| Muriatic (Tower Salts), 30° Tw.                    | per bottle        | 0 0 10       |  |
| (Cylinder), 30° Tw.                                |                   | 0 3 0        |  |
| Nitric 80° Tw.                                     | per lb.           | 0 0 1 1/4    |  |
| Nitrous                                            |                   | 0 0 1 1/4    |  |
| Oxalic                                             | nett              | 0 0 3 1/2    |  |
| Phosphoric, 1750°                                  |                   | 0 1 0        |  |
| Picric                                             |                   | 0 0 1 1/4    |  |
| Sulphuric (fuming 50 %)                            | per ton           | 15 10 0      |  |
| (monohydrate)                                      |                   | 5 10 0       |  |
| (Pyrites, 168°)                                    |                   | 3 0 0        |  |
| (free from arsenic, 145°)                          |                   | 1 5 0        |  |
| Sulphurous (solution) S.G. 1025                    |                   | 1 7 6        |  |
| Tannic (pure)                                      | per lb.           | 0 1 2 1/2    |  |
| Tartaric                                           |                   | 0 1 3        |  |
| Arsenic, white powdered                            | nett per ton      | 22 10 0      |  |
| Alum (loose lump)                                  |                   | 4 12 6       |  |
| Alumina Sulphate (pure)                            |                   | 4 12 6       |  |
| Aluminoferrous                                     |                   | 2 5 0        |  |
| Aluminium                                          | per lb.           | 0 2 10       |  |
| Ammonia, Anhydrous                                 |                   | 0 1 3        |  |
| " 880=28° B.                                       | per lb.           | 0 0 2 1/4    |  |
| " =24° B.                                          |                   | 0 0 1 1/4    |  |
| " Carbonate                                        | nett              | 0 0 3 1/4    |  |
| " Muriate                                          | per ton           | 22 0 0       |  |
| " (sal-ammoniac) 1st & 2nd                         | per cwt.          | 39/- & 37/-  |  |
| " Nitrate                                          | per ton           | 37 10 0      |  |
| " Phosphate                                        | per lb.           | 0 0 6 1/2    |  |
| " Sulphate (grey) London                           | per ton           | 8 2 6        |  |
| " (grey) Hull                                      |                   | 8 0 0        |  |
| Aniline Oil (pure)                                 | per lb.           | 0 0 7 1/4    |  |
| Aniline Salt                                       |                   | 0 0 6 1/4    |  |
| Antimony                                           | per ton           | 30 0 0       |  |
| " (tartar emetic)                                  | per lb.           | 0 0 9 1/2    |  |
| " (golden sulphide)                                |                   | 0 0 10       |  |
| Barium Chloride                                    | per ton           | 7 0 0        |  |
| " Carbonate (native)                               |                   | 3 10 0       |  |
| " Sulphate (native levigated)                      |                   | 42/6 to 65/- |  |
| Bleaching Powder, 35 %                             | nett              | 6 17 6       |  |
| " Liquor, 7 %                                      |                   | 3 10 0       |  |
| Bisulphide of Carbon                               |                   | 12 10 0      |  |
| Chromium Acetate (crystal)                         | per lb.           | 0 0 6        |  |
| Calcium Chloride                                   | per ton           | 2 2 6        |  |
| China Clay (at Runcorn) in bulk                    |                   | 15/- to 30/- |  |
| Coal Tar Products and Dyes:—                       |                   |              |  |
| Alizarine (artificial) 20 %                        | nett per lb.      | 0 0 7 1/4    |  |
| Magenta                                            |                   | 0 3 9        |  |
| Anthracene, 30 % A, f.o.b. London                  | per unit per cwt. | 0 0 11 1/2   |  |
| Benzol, 90 %                                       | per gallon        | 0 2 0        |  |
| " 50/90                                            |                   | 0 1 8        |  |
| Carbolic Acid (crystallised 40°)                   | per lb.           | 0 0 7        |  |
| " (crude 60°)                                      | per gallon        | 0 2 1        |  |
| Creosote (ordinary)                                |                   | 0 0 1        |  |
| " (filtered for Lucigen light)                     |                   | 0 0 1 1/4    |  |
| Crude Naphtha 30 % @ 120° C.                       |                   | 0 0 8        |  |
| Grease Oils, 22° Tw.                               | per ton           | 2 10 0       |  |
| Pitch, f.o.b. Liverpool or Garston                 |                   | 1 12 6       |  |
| Solvent Naphtha, 90 % at 160°                      | per gallon        | 0 1 3        |  |
| " Lucigen" and "Wells" Oils                        |                   | 0 0 2 1/2    |  |
| Copper                                             | per ton           | 45 8 9       |  |
| " Sulphate                                         |                   | 18 15 0      |  |
| " Oxide (copper scales)                            |                   | 41 10 0      |  |
| Glycerine (crude)                                  |                   | 36 0 0       |  |
| " (distilled S.G. 1250°)                           |                   | 75 0 0       |  |
| Iodine                                             | nett, per oz.     | 0 0 9        |  |
| Iron Sulphate (copperas)                           | per ton           | 1 7 6        |  |
| " Sulphide (antimony slag)                         |                   | 2 0 0        |  |
| Lead (sheet) for cash                              |                   | 12 10 0      |  |
| " Litharge Flake (ex ship)                         |                   | 14 10 0      |  |
| " Acetate (white)                                  |                   | 21 10 0      |  |
| " brown                                            |                   | 16 0 0       |  |
| " Carbonate (white lead) pure                      |                   | 16 0 0       |  |
| " Nitrate                                          |                   | 19 0 0       |  |
| Lime, Acetate (brown) (ex shi                      | per ton           | 4 5 0        |  |
| " (grey) (ex ship                                  |                   | 7 7 6        |  |
| Magnesium (ribbon and wire)                        | per oz.           | 0 2 3        |  |
| " Chloride (ex ship)                               | per ton           | 2 7 6        |  |
| " Carbonate                                        | per cwt.          | 1 17 6       |  |
| " Calcined Magnesia                                | per ton           | 115 0        |  |
| " Sulphate (Epsom Salts)                           | per ton           | 2 15 0       |  |
| Manganese, Sulphate                                |                   | 16 10 0      |  |
| " Borate                                           | per cwt.          | 2 15 0       |  |
| " Ore, 70 %                                        | per ton           | 3 15 0       |  |
| Methylated Spirit, 61° O.P.                        | per gallon        | 0 1 8        |  |
| Naphtha (Wood), Solvent                            |                   | 0 3 0        |  |
| " Miscible, 60° O.P.                               |                   | 0 3 4        |  |
| Oils:—                                             |                   |              |  |
| Cotton-seed                                        | per ton           | 17 5 0       |  |
| Linseed                                            |                   | 20 0 0       |  |
| Petroleum, American                                | per gallon        | 0 0 6 1/2    |  |
| Stearine                                           | per ton           | 22 10 0      |  |
| Phosphorus (yellow)                                | per lb.           | 0 2 2        |  |
| " (red)                                            |                   | 0 2 8        |  |
| Potassium (metal)                                  | per oz.           | 0 3 7        |  |
| " Bichromate                                       | nett per lb.      | 0 0 4 1/4    |  |
| " Carbonate, 90 % (ex ship)                        | per ton           | 16 15 0      |  |
| " Chlorate                                         | per lb.           | 0 0 4 1/4    |  |
| " Cyanide, 98 %                                    |                   | 0 1 2 1/4    |  |
| " Hydrate (Caustic Potash) 90 %                    | per ton           | 24 10 0      |  |
| " (Caustic Potash) 75/80 %                         |                   | 20 10 0      |  |
| " (Caustic Potash) 70/75 %                         |                   | 19 10 0      |  |
| " Nitrate (refined)                                | per cwt.          | 1 1 6        |  |
| " Permanganate                                     | per cwt.          | 3 7 6        |  |
| " Prussiate Yellow                                 | per lb.           | 0 0 1 1/4    |  |
| " Sulphate, 90 % (ex ship                          | per ton           | 9 15 6       |  |
| " Muriate, 80 % (do.)                              |                   | 8 10 0       |  |
| Silver (metal)                                     | per oz.           | 0 2 1 1/2    |  |
| " Nitrate                                          |                   | 0 2 1 1/2    |  |
| Sodium (metal)                                     | per lb.           | 0 2 1 1/2    |  |
| " Carb. (refined Soda-ash) 48 %                    | nett per ton      | 4 15 0       |  |
| " (Caustic Soda-ash) 48 %                          |                   | 4 5 0        |  |
| " (Carb. Soda-ash) 48 %                            |                   | 4 0 0        |  |
| " (Alkali) 58 %                                    | F.O.B.            | 3 15 0       |  |
| " (Soda Crystals)                                  |                   | 2 0 0        |  |
| " Acetate (ex-ship)                                |                   | 14 10 0      |  |
| " Arseniate, 45 %                                  |                   | 15 0 0       |  |
| " Chlorate                                         | per lb.           | 0 0 6 1/4    |  |
| " Borate (Borax)                                   | net, per ton      | 19 10 0      |  |
| " Bichromate                                       | per lb.           | 0 0 3 1/4    |  |
| " Hydrate (77 % Caustic Soda) (f.o.b.) net pr. ton | lots              | 9 7 6        |  |
| " (74 % Caustic Soda)                              |                   | 8 7 6        |  |
| " (70 % Caustic Soda)                              |                   | 7 7 6        |  |
| " (60 % Caustic Soda)                              |                   | 6 7 6        |  |
| " (60 % Caustic Soda, cream) (f.o.b.)              |                   | 6 7 6        |  |
| " Bicarbonate                                      |                   | 6 10 0       |  |
| " Hyposulphite                                     |                   | 6 10 0       |  |
| " Manganate, 25 %                                  |                   | 15 0 0       |  |
| " Nitrate (95 %) ex-ship Liverpool                 | per cwt.          | 0 8 0        |  |
| " Nitrite, 98 %                                    | per ton           | 30 0 0       |  |
| " Phosphate                                        |                   | 13 0 0       |  |
| " Silicate (glass)                                 | per ton           | 4 10 0       |  |
| " (liquid, 100° Tw.)                               |                   | 3 10 0       |  |
| " Stannate, 40 %                                   | per cwt.          | 3 2 9        |  |
| " Sulphate (Salt-cake)                             | per ton           | 1 3 6        |  |
| " (Glauber's Salts)                                |                   | 1 10 0       |  |
| " Sulphide                                         |                   | 7 10 0       |  |
| " Sulphite                                         |                   | 5 15 0       |  |
| Strontium Hydrate, 100 %                           |                   | 8 0 0        |  |
| Sulphocyanide Ammonium, 95 %                       | per lb.           | 0 0 6 1/4    |  |
| " Barium, 95 %                                     |                   | 0 0 4 1/4    |  |
| " Potassium                                        |                   | 0 0 7        |  |
| Sulphur (Flowers)                                  | per ton           | 6 5 0        |  |
| " (Roll Brimstone)                                 |                   | 5 10 0       |  |
| " Brimstone: Best Quality                          |                   | 3 12 6       |  |
| Superphosphate of Lime (26 %)                      |                   | 2 17 6       |  |
| Tallow                                             |                   | 20 10 0      |  |
| Tin Crystals                                       | per lb.           | 0 0 3 1/4    |  |
| " English Ingots                                   | per ton           | 63 10 0      |  |
| Zinc (Spelter)                                     |                   | 16 15 0      |  |
| " Chloride (solution, 100° Tw.)                    |                   | 5 2 6        |  |



# THE CHEMICAL TRADE JOURNAL AND OIL, PAINT and COLOUR REVIEW.

Publishing Offices: 32, BLACKFRIARS STREET, MANCHESTER.

469.

SATURDAY, MAY 16, 1896.

Vol. XVIII.

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## CURRENT TOPICS.

THE EKMAN PULP AND PAPER COMPANY, LIMITED.

THIS week the well-known Ekman Paper Company have  
made an issue of £130,000. of 4½ per cent. First Mortgage  
Debentures of £100. each. These have been issued for the  
conversion or redemption of the outstanding debentures and  
debenture stock of the company, which amount to £112,500.,  
and also with the additional object of providing further  
working capital. The profit and loss account for the last five  
years has shown a steadily increasing balance on the right  
side. The company are not merely paper makers, but are  
also makers of wood-pulp by the sulphite process, which  
is carried on at their principal works at Northfleet,  
Kent. They also have a smaller paper-making works at  
Ilford. It is interesting to note that while the profit last year  
is shown by the profit and loss account to have been close on  
£23,000., the interest on the present issue of debentures calls  
for about one-fourth of this sum, or £6,000. Power has been  
reserved to further issue £20,000. of debentures, which shall  
rank with the present issue, but this can only be done for  
providing funds for expenditure on capital account, and with  
the consent of the trustees.

SEWAGE AND THE SHIP CANAL.

Despite all that has been said about the terrible results  
that were bound to attend the discharge of the Ship Canal  
water between Runcorn and Eastham, owing to the state of  
the Irwell, which is the main feeder of the upper reaches,  
and the sewage that is also turned directly into the Canal, it  
appears that very little difference has actually been caused by  
the change. Fish used to abound, and still do so. While the  
state of the Canal and its feeders has by no means wholly  
spoil the livelihood of those who follow the piscatorial  
calling, still it is necessary to bear in mind that there are  
evidences of sewage contamination, which is evidently dis-  
tasteful to both fish and vegetation. It has recently been  
placed on record that while mullet and pollock are caught in  
the locks at Eastham, and porpoise frequent the Cheshire  
side of the Mersey, none of these are now found on the  
Lancashire side. So that while animal and vegetable life  
is still flourishing in water which has undoubtedly received  
much sewage contamination, the results are only apparent  
on one side of the river. This sounds somewhat paradoxical,  
but perhaps may be accounted for by the assumption that,  
owing to the great dilution, the water has purified itself in the  
way peculiar to moving water, while the solids have deposited  
on the Lancashire bank, thus making this side objectionable.  
It is a pity the same results cannot be induced at Barton and  
higher up the Canal. It is stated that the Irwell is much  
better than it was, but as it is probable we shall have some-  
thing to say on this point in the near future, we will reserve  
our remarks until we can check impressions by figures.



## THE NEW PETROLEUM SCHEME.

Considerable excitement has been caused in certain quarters over the talk there has been about a scheme which is shortly to be brought before the public, proposing to import crude petroleum, and refine it in this country. The scheme certainly sounds a pleasing one, but it is not so easy to estimate the worth of the proposal. There are many difficulties that must be taken into careful consideration. Already the scheme and the draft prospectus have been severely handled, and apparently not without justification. At the same time this criticism only gives one side of the case. It must be admitted that so far the case against the scheme, as made out at present, is a strong one, and will need substantial refutation, but the whole affair is of importance for other than mere financial reasons. We shall come to these when we have briefly referred to the objections that have been raised against the scheme.

In the first place exception is taken to the value of the tank steamers that are to be acquired, and on this point the current criticism is so pertinent and formidable as to leave little room for the existence of two opinions. The principal point, however, would seem to be the prospective sources of the crude petroleum. After a moment's thought it will be seen that any idea of American crude must be dismissed. The Standard Oil Co. practically controls all that can get to the sea board, having for years strenuously opposed all the independent efforts that have been made to get crude to the coast, either for refining or export. Consequently there is nothing for it but to depend on Russian and Galician supplies. Concerning Galician crude, it finds at present an all-sufficient outlet in the immediate vicinity, and little could be depended on from this quarter. Of Russian there is plenty, but there is the loss and cost of the transit of crude as compared with refined, and the opposition of the Russian Government to the exportation of crude to be taken into consideration. Lastly, it is a fact that in those countries where the refining of imported crude oil is successfully prosecuted there is a strong protective tariff to check the import of refined oil. In this country there is no such tariff, while to conceive Protectionist ideas is a sin and to promulgate them a crime. Such are the chief points raised against the scheme.

In the present state of the oil industry, however, it is necessary to look a long way below the surface before arriving at a decision on the merits of an argument. Though there are weak points in this new scheme, before attaching great importance to any statements it is necessary to know the authors, both of the scheme and the criticisms thereon. It is well known that any proposal such as that set forth under this new scheme would be attacked by the all deadliest weapons of competition that the great American oil company possess. The idea would not suit their book at all, and therefore at all costs would have to be argued out of time, then bought out, sworn out, crushed out, burnt out, blown out, or otherwise rendered non-existent. Until we know the personality of those who are so eager to protect the public against investing their money in a worthless scheme, little value can be attached to their warnings, which are so glibly given before even the prospectus has been officially issued to the public. If the source of information is satisfactory, the early exposure of the weak points of the new scheme is a good fault, but though we are not greatly enamoured of the scheme as far as we have been able to acquaint ourselves with its details, still it is necessary to accept with caution wholesale condemnation that is not backed by the authority or respectability conferred by the large type of the leading article or the classification of the Correspondence column. When

such a sweeping indictment is accorded the stray corner which is more often sacrificed to a paragraph descriptive of someone's pills or syrup, it is as well to take a little salt with your literary repast, so as to temper the flavour.

## THE CARRIAGE OF EXPLOSIVES.

## AN IMPORTANT CASE.

AT the Thames Police-court, E.C., last week, the adjourned summonses against the New Explosives Company, Limited, of Queen Victoria-street, E.C., taken out by Mr. J. W. Godfrey, of the London County Council, for affixing to certain cases of gun-cotton false labels, to prevent the Great Eastern Railway Company from complying with bye-law No. 3, under the provisions of sections 37 and 39 of the Explosives Act, 1875, and for keeping a quantity of gun-cotton in an unauthorised place, again came on for hearing. Mr. Berry prosecuted on behalf of the London County Council, and Mr. J. P. Grain defended. On December 24th ult. the defendant company sent two cylinders, each containing 60 lb. of gun-cotton, to the Great Eastern Railway Company at Stowmarket as "E.C. powder." The prosecution alleged that the precautions adopted in the carriage of gun-cotton were entirely different from those taken in the conveyance of E.C. powder, which, on account of its harmless character, was treated as ordinary merchandise. The gun-cotton had, in consequence of the action of the Explosives Company, been taken to London without any special precaution. It remained at Liverpool-street on December 25th and 26th, and on the 27th was taken to Ford's house, which consisted of four rooms only, at Millwall. The police heard of what had happened, and communicated with the County Council on behalf of the company. Mr. Grain said he failed to find anything in the Act which required the affixing of a certain label. Had a true label been affixed the railway company would not have done anything more or anything less than they did do. Mr. Dickinson said the putting of the label "E.C. powder," instead of "gun-cotton," prevented the railway company from taking the special steps which would have been taken had it been known what the cylinders really contained. Mr. Grain, continuing, said that if an offence had been committed it had been done by the railway company, who were bound, as carriers, to adopt the same precautions when carrying E.C. powder as when carrying wet gun-cotton. It was incumbent on the railway company to adopt all precautions as prescribed by the Act. The defendants did not deceive the railway company that they were carrying an explosive. Had the County Council been rightly advised, they would have taken out a summons for a different offence altogether; and he submitted that on that count his clients could not be convicted. What the Explosives Company had done did not prevent the Great Eastern Railway Company from doing their duty. Mr. Berry argued that the wilful act of the defendant company caused the breach. All he relied on was the evidence, and he admitted there was a difficulty. Mr. Dickinson said he must hold that Mr. Grain was right, and he dismissed the first summons. Mr. Grain then dealt with the question of storing the gun-cotton in an unauthorised place, and argued that from the time it left Stowmarket until it was seized it was under conveyance. It was a mere temporary housing of the gun-cotton while it was in transit. On those grounds he held that this summons must also fail. Mr. Berry submitted that if the goods were not properly labelled the requirements of the regulations as to conveyance had not been complied with. The labels had not been marked with the name of the explosive. Mr. Dickinson said he had no doubt that there had been an infringement of the sub-section by the packages being labelled wrongly. Although there must be a conviction, he could not help thinking it was a very technical matter. The whole case hinged on the defendants not having properly labelled the packages, and for that they were clearly wrong, both legally and morally. Through that the whole trouble had arisen, but he must also remember the thing arose through great pressure. He could not believe the Explosives Company had acted as they did for the purpose of saving a few shillings, and another potent reason was that there had been no real danger to the public, who, however, had a great scare. There would be a penalty of £5 and £8. 8s. costs, but the gun-cotton would not be forfeited.

**GOLD PRODUCTION.**—The output from the Rand district during the past month, as cabled by the Witwatersrand Chamber of Mines, amounts to 143,195 oz. This total, however, is exclusive of the returns of several companies which, under the title of the "Association of Mines of the South African Republic," give their joint output as 33,510 oz. As the Wemmer result is included in both returns, we have deducted it from the Association figures, which are thus reduced to 27,913 oz. The month's production is, therefore, 171,108 oz., and shows a decrease of 2,844 oz. as compared with the previous total, and a decrease of 15,215 oz. as compared with the corresponding month of 1895.



## The Patent List.

*It is compiled from Official sources in the Manchester Laboratory, under the immediate supervision of Davis and Alfred R. Davis, who report professionally value of Chemical Patents.*

### NOTIFICATIONS FOR ENGLISH LETTERS PATENT.

Process of Cyanides. J. A. Wanklyn and W. J. Cooper 8,826. April 27.  
Purifying and Liquefying Acetylene. O. Imray 8,801.

Process for Obtaining Cyanides. J. B. Readman. 8,882. Apr 28  
White Lead Substitute and other Oxy-salts from Lead Sulphate and Chloride. S. Ganelin. 8,981. Apr 28  
Process for Recovering Gold, Silver, and other Precious Metals. 8,967. April 28

Cements and Varnishes for Electrical Purposes. J. A. 9,035. April 29.

Process in Manufacture of White Arsenic. T. P. Sims and W. 9,076. April 30.

Vacuum Apparatus for Drying, Distilling and Concentrating. Longshaw. 9,084. April 30.

Apparatus for Decomposing Water into its Component J. T. E. F. Casson. 9,184. May 1.

Complex Lead and Zinc Sulphide Ores. C. T. J. Vautin. 9,220.

Refined Oil. F. B. Aspin and The Electrica Oil Refining Co., 38. May 1.

### NOTES OF LATEST COMPLETE SPECIFICATIONS.

*Extracts are specially prepared for the Chemical Trade Journal, RIGHTS of publication are RESERVED. This is the earliest extracts of Chemical and allied patents accessible to the*

Process in the Method and Apparatus for Washing Alkali in, Obtained in Electrolytic Apparatus. P. Jensen, 77, Chancery-C. (communicated by H. C. F. Störmer, 5, Zettlitzgrade, Christiania, Eng. Pat. 24,837. Dec. 27, 1895.

Electrolytical apparatus employing a mercury cathode the amalgam of the alkali and mercury is generally decomposed

To facilitate this decomposition the following apparatus. A convenient receptacle containing a layer of amalgam and a supernatant layer of water is fitted with a shallow tray. This tray is moved up and down by a rod attached to the tray. When at the bottom the tray is charged with and on being raised the latter falls through the water in a fine decomposed. As an alternative lifting device a chain with cups attached may be substituted for the tray. There is one

Basket or Packing Case for Carboys of Acid and other C. Pottier, 14, Rue St. Ferdinand, Paris. Eng. Pat. 11,405. June 11,

Attention is a modification of the now familiar steel carboy. The upper and lower rings are made of wood, which can be to the desired shape after steaming, and are afterwards lined with tar, etc., to render them acid proof. These rings are supported by a suitable number of principal uprights rivetted to the wooden rings. At a convenient distance upper ring is a second band which strengthens the principal band, while carrying a number of intermediate uprights, convenient room for the top ring to be used as a handle. The principal features are the use of a wooden ring at the bottom under the hamper, thus obviating breakage when the carboys are above the other, and the addition of a spring support to of the hamper. At the centre point where the bottom overlap each other a coil of hoop steel is fastened, which, by elasticity, prevents the bottom of the carboy being broken, how much the bottom of the hamper may have sunk. Under these conditions, however, the bottom ring keeps the carboy off the ground here are two figures.

Improved Soap Extract and a Process for Manufacturing the A. Luhn, Rittershausen, Barmen, Germany. Eng. Pat. 7,442. 1895.

Process of a soap lye, hard soap must be reduced to small pieces, in troublesome and inconvenient. When dry-soaps or soap prepared, to overcome this difficulty, it frequently happens loss in cleansing power by the treatment. This invention to avoid the drying process by making a soap on the basis—180 parts of soda are dissolved in 300 parts of boiling water, his solution 200 parts of pure soap having a basis of turpentine resin are dissolved and 200 or 300 parts of dried and sifted

neutral soap. The soap thus obtained is shredded and mixed by continual agitation with pulverised neutral soap in the proportion of 100 parts of the former to 200 of the latter,  $\frac{3}{5}\%$  of caustic ammonia being simultaneously added. In this way a handy and cheap soap extract can be made.

Process of Rendering Amorphous Phosphorus Applicable as a Substitute for Yellow Phosphorus for Matches, Primings, and the Like. M. Bals, III., Wassergasse 4, Vienna, and E. Gurovits, I., Bartensteingasse 8, Vienna. Eng. Pat. 4,714. March 2, 1896.

Sulphur is melted, and amorphous phosphorus added, well mixed, and the heating continued for some time. The percentage of sulphur is varied according to the use the product is to be put to. When cool the product can be pulverised without danger.

## SOCIETY OF CHEMICAL INDUSTRY.

### MANCHESTER SECTION.

THE last meeting of the session was held at the rooms of the Chemical Club, Victoria Hotel, on Friday, the 8th inst., the object of the meeting being to discuss the papers read during the session and published in the Journal of the society up to the time of the meeting. The gathering was not quite so strong as usual, owing, no doubt, to the sudden burst of fine weather prejudicing members in favour of discussing natural science with nature itself instead of indirectly through the medium of the society.

In connection with Dr. Lewkowitsch's paper on the "Estimation of Unsaponifiable Matter," Mr. Bell indicated the method he usually adopted. Reference was made to the tariff of the insurance companies, and a short discussion on this point ensued. Dr. Lewkowitsch objected to Mr. Bell's method, because it was a differential one, and pointed out the discrepancies in the insurance companies' tariff, set forth in his recent paper on "Wool oils," read before the Society of Dyers and Colourists (an abstract of which will appear in an early issue of this Journal—Ed. C. T. J.). Mr. Thompson also took part in the discussion, and suggested that in Mr. Bell's method there was a danger of loss in washing. He also referred to the greater solubility of iron and lime soaps over soda soaps in petroleum spirit.

Dr. Gerland contributed a few further particulars about his method of estimating indigo, which was discussed by Dr. Schunck, Dr. Grossmann, and Mr. Barnes. Dr. Schunck pointed out how he had experienced a loss in estimating indigo, and referred to the researches he had made to ascertain how the loss occurred. Dr. Grossmann took exception to the method, because it was not founded on a commercial basis, a condition which he deemed essential if such a test was to be of service for practical purposes. He expressed his preference for small trials in the laboratory on the lines followed in the dyehouse. In replying to the discussion, Dr. Gerland pointed out that practical experience showed that small scale tests did not tally with the results obtained with large scale tests, and emphasised the difficulties arising from the variation in the shade and depth of colour when tests were made in this fashion. The discussion on the remaining papers was somewhat desultory, and cannot be summarised without encroaching upon the publication rights of the Society, in the Journal of which they will appear in due course.

### LIVERPOOL SECTION.

This section met at University College on Wednesday evening, the 6th inst., under the presidency of Mr. Eustace Carey. The Chairman took the opportunity of remarking that a statement had recently been published to the effect that the British alkali trade had of late years decreased to a considerable extent. The statement he criticised, pointing out that it was based on the money values of the products, which is altogether misleading by reason of the lowering of the prices of production in late years; by taking the actual weight production, the figures showed an improvement instead of the reverse. Dr. G. C. Clayton read a paper on "Chlorine as a disinfectant." He detailed a series of experiments, conducted on a bacteriological basis, with a view to ascertaining the efficiency of chlorine, of bleaching powder, and of sodium hypochlorite. The experiments, carried out in conjunction with Professor Boyce, of University College, gave results distinctly in favour of the use of sodium hypochlorite as a germicide. Comparisons favourable to sodium hypochlorite were made between this material and such products as corrosive sublimate and carbolic acid. A paper was also read by Mr. W. J. Orsman on colliery explosions in dusty mines, the results of communicated experiments tending to show that carbon monoxide when mixed with coal dust forms a highly dangerous and destructive explosive. The inference to be drawn from this is that such blasting agents as gunpowder, which produce carbon monoxide on burning, are highly dangerous in their application to coal mining. This meeting terminated the society's sittings for this session.



## Parliamentary Jottings.

### DEPRESSION IN THE COAL TRADE.

In the House of Commons recently Mr. D. Thomas asked the Home Secretary if he was aware that, owing to the protracted depression in the coal trade, a number of collieries in the Aberdare and Rhondda Valleys have been closed; that, in consequence, several thousand workmen have been thrown out of employment; and that during the past five years the wages of over 100,000 workmen engaged in colliery work in Glamorganshire and Monmouthshire have been reduced by nearly 50 per cent. on the standard rates; and whether, in view of the suffering and distress that prevails among the workmen in this great national industry, the Government is prepared to take immediate steps to relieve it, similar to those proposed to be taken to assist the owners of agricultural land.

Sir M. White Ridley: I am aware that certain collieries have been closed in this district because they cannot be worked with profit, and also that a great reduction of wages has taken place in the last five years. The hon. member, however, will remember that though wages have fallen from 57 per cent. above standard in 1891 to about 11 per cent. above standard at the present time, there was a corresponding rise in the five years previous to 1891, and that the present rates are higher than the rates in 1886. I find also that the number of persons employed in coal mines in the two counties has increased from year to year, and was greater in 1895 than in any previous year.

Mr. Thomas asked the right hon. gentleman if he was aware that the rates had gone up in that district during the last few years.

Sir M. White Ridley replied that he was not aware that the rates had risen during the last few years.

Mr. Fenwick: I beg to ask the President of the Local Government Board whether he is aware that great poverty and distress exists in the county of Northumberland in consequence of the continued depression in the coal trade, notwithstanding the fact that the miners' wages have been twice reduced within the last six months; and whether, in view of these facts, the Government will take steps to remedy such distress by means of a subvention or otherwise.

Mr. Chaplin: I was not aware of the distress referred to in the question until the hon. member was good enough to send me a newspaper extract in support of his statement. In that extract I find it stated that the collieries of Northumberland are, on the whole, well employed. I assume that the question has reference to the villages of Bebside and Chevington, where, it is stated, there has been much distress in consequence of the number of days the two collieries have been idle. I am glad, however, to find from the same source that assistance has been given by the Northumberland Miners' Association, and also in money and food by persons in the neighbouring districts. While I greatly regret there should be distress in these two villages, it is not in my power to take the course suggested.

### A SUGGESTED COMPTROLLER OF PATENTS.

In reply to Sir J. Leng (Dundee), who asked a question with reference to the suggestion of Lord Justice Kay that a comptroller of patents should be appointed to deal with prior specifications and applications for patents,

Mr. Ritchie (Croydon) said: I am not prepared to propose the alteration of the existing practice. The subject is a thorny one, and has engaged the attention of Parliament and of the public on and off for many years. 25,053 patents were applied for in 1895, and an enormous staff would be required if the obligation of deciding on the novelty of each application was imposed on the Patent Office. I must further remind the hon. member that the most eminent authorities differ occasionally as to whether an invention is new.

## MANGANESE IN EASTERN TENNESSEE.

BY WILLIAM MCGOVERN.

MANGANESE ore in considerable quantities occurs in Shady Valley in the eastern part of Johnson county, Tenn., and near the Virginia line. At what is known as the Heberlin mine an opening was made some years ago and about 800 tons of a superior quality of manganese taken out, which still remains piled near the mouth of the mine. When work was stopped the ore apparently continued in about the same quantity under the low ridge in which it was found. The amount was won in a space of 15 feet wide by 40 in length. About 100 yards from the main opening another was made, disclosing the ore in about the same quantity. Across a small stream on another but somewhat higher range of hills manganese has been found at several places, although not so plentifully as at the main opening from which the pile of stock ore was taken. The ore here is principally a psilomelane, while in the other openings in the valley it is pyrolusite.

Next to the Heberlin the most important showing of manganese in Shady Valley is at the Wright property farther up and near the head

of the valley. During the past summer, 1895, an opening was on the ore, and about 150 tons were taken out. The ore here massive form about six feet under ground and about the same of feet in thickness, and at a distance has somewhat the appearance of a seam of coal. When work on it was stopped the ore shows signs of exhaustion, and it probably exists at this place in considerable quantity. At about a mile from the Wright opening in the small stream a manganese ore was found, which upon investigation proved to be important, as it has been followed for several yards is here in the shape of a ledge with upturned edge, four feet wide six deep. About 10 tons of ore have been mined at this place. Lower end of the valley on lands of the estate of P. W. Sheaffer prospecting has been done and the ore exposed in several places. The several openings on this property some 15 or 20 tons of manganese have been raised.

As the distance from Shady Valley to railroad is 20 miles over roads the work so far done has been for the purpose of development to prove the existence of manganese ore in quantity. Aside from places before mentioned manganese has been noted at more than other localities in the valley, and it is believed that this section prove the most important manganese district along the entire valley of Virginia and Tennessee. The analyses of these are here given:—

### Analyses of Johnson County, Tenn., Manganese Ore.

|                                     | Silica. | Met. Iron. | Met. Man. | P. |
|-------------------------------------|---------|------------|-----------|----|
| Heberlin bank, pile of stock ore .. | 1'620   | 4'600      | 51'048    | 0' |
| Heberlin bank, pile of washed ore.  | 1'100   | 3'000      | 55'000    | 0' |
| Alex. Coles at small stream.....    | 1'400   | 2'300      | 53'085    | 0' |
| Wright bank .....                   | 7'600   | 7'100      | 41'440    | 0' |
| Sheaffer bank .....                 | 4'120   | 5'200      | 50'250    | 0' |
| King bank .....                     | 1'700   | 16'100     | 40'870    | 0' |

Outside of Johnson, manganese is known to be present in Clinch, Unicoi, Sevier, and Monroe counties on about the line which is the junction of the lowest Silurian with metamorphic and rocks of the azoic belt. In this connection a close study has developed certain which may be of interest both from an economic and scientific point.

1. The nearer manganese ore occurs to the line of the stratified lower Silurian rocks the more likely it is to be a psilomelane, changing gradually to the form of pyrolusite as it enters the azoic belt.

2. Where found in deposits of lower Silurian or Cambrian age more or less associated with iron ore, becoming more near manganese as its position in older rocks is encountered.

3. When an ore holds manganese and iron in the proportion about 40 and 15 per cent. metallic and low in silica, the percentage phosphorus will be low but increasing as these proportions are in either direction. Whether this is only a feature of the East Tennessee deposits or holds elsewhere is not known.—*American Manufacturer*

## EXPORTS OF PETROLEUM FROM U.S.A.

THE Chief of the Bureau of Statistics, Washington, gives the following returns of the exports of petroleum and petroleum products for March, 1896. The total shipments were 64,26 gallons, compared with 59,983,144 gallons in 1895. The total for nine months ending March, 1896, was 650,676,974 gallons against 671,190,133 gallons during the same period in 1895. Details of the shipments are as follow:—

|                          | CRUDE PETROLEUM.          | Gallons. |
|--------------------------|---------------------------|----------|
| Total, March, 1896 ..... | 8,510,998                 |          |
| " " 1895 .....           | 10,156,490                |          |
|                          | NAPHTHAS.                 |          |
| Total, March, 1896 ..... | 1,007,522                 |          |
| " " 1895 .....           | 1,031,416                 |          |
|                          | ILLUMINATING.             |          |
| Total, March, 1896 ..... | 50,686,538                |          |
| " " 1895 .....           | 44,889,370                |          |
|                          | LUBRICATING AND PARAFFIN. |          |
| Total, March, 1896 ..... | 4,028,618                 |          |
| " " 1895 .....           | 3,859,080                 |          |
|                          | RESIDUUM.                 |          |
| Total, March, 1896 ..... | 26,418                    |          |
| " " 1895 .....           | 46,788                    |          |

THE MICHIGAN ALKALI CO.—This company's works at Wyandotte, Michigan. The president of the company, Capt. J. Ford, is the founder of the alkali trade on the Detroit River. The company produce an excellent high-grade soda ash, that has made itself very popular among users in the natural gas regions. Further extensions of the plant and output are under consideration.



### TYREE'S LITMUS PENCIL.

and in commerce litmus is a colouring matter prepared from various species of lichens by treating them with ammonia, ale urine, chalk and indigo. It contains four distinct colouring matters, viz., azolitmin, erythrolitmin, erythrolein, spaniolitmin. Erythrolitmin occurs rarely in litmus, and erythrolein is coloured purple and not blue by alkalis, azolitmin and erythrolitmin considered the essential colouring matters of litmus. It will be such a complex substance containing so many impurities in preparing what is known as litmus paper, which is unfit for use even when freshly prepared, as it will not keep, nor will it give the presence of acids and alkalis when they exist in portions, from the fact of its being impossible to prepare a litmus of sufficient strength to impart to paper litmus stand exposure and produce a correct impression upon acids. Though there may be a certain lack of impartiality in the latter indictment, it is, however, not wholly without foundation. The ingenious pencil contrivance we illustrate herewith



many advantages over ordinary litmus paper, being a very well as handy, source of litmus, since the pencils are retailed each, being placed on the market by Messrs. Thos. Christy 25, Lime-street, E.C. The pencil itself is constructed of pure blue and red litmus inserted in an ordinary wood and is an advantage both in utility and accuracy over litmus preparations hitherto in use. It is characterised by its simplicity, and Mr Tyree claims that it will detect one part in a thousand, whereas litmus paper can only detect one part in a hundred (1,400). For use, sharpen the ends as you would a lead pencil, mark on a strip of white paper and insert the specimen to be tested. Before using this the ends are dampened. A convenient method which we have arrived at in the trial of the pencil is to make a small red or blue spot, as may be, and place on the same a drop of distilled water of greater diameter. The liquid is then drawn slightly off the spot, a solution having been formed *in situ*. On adding a substance to be tested the reaction is clearly visible against the surface of the paper. In this way great accuracy is attainable following the speedier method of dropping a little of the substance to be tested on to the streak or spot made with the pencil, of a solution made from 1/10 c.c. of normal sulphuric acid in 100 c.c. of water is, we find, at once plainly indicated.

### BULK OIL INSTALLATION AT BOMBAY.

erection of oil storage tanks on the new Mody Bay Bunder, between the new Ballard Pier and Carnac Bunder, stretching over more than a thousand feet into the harbour, is now commencing the wholesale importation of kerosene oil by the Bulk Oil has now commenced. Recently the tank oil boat Bullmouth arrived in harbour, bringing over five thousand tons of oil. The tank steamer was brought to the Mody Bay where the oil pumped out into tanks by the engines belonging to it. The oil, says the *Bombay Gazette Budget*, will fill up two hundred tanks, the capacity of each being 698,120 gallons. Two pumps are provided in the steamer for pumping out the oil from the tanks. Each is capable of discharging from three hundred to four hundred tons per hour when working at full speed. The Bullmouth took about seven hours to fill up the shore tanks with 1,400,000 gallons of oil.

The construction of the oil tanks, which form a unique land in the harbour, a large area of land, measuring six hundred and twenty feet in length, and two hundred and ninety-seven in breadth, or about a thousand square yards, and surrounded on three sides by water, has been acquired by the Bulk Oil Syndicate from the Port Trust. The construction of these tanks was undertaken in November last, there being a strong prejudice against the storage of oil in Bombay, Messrs. Graham and Co., the Bombay agents of the syndicate, found great difficulty in getting a piece of land; and it was a considerable time elapsed that Mr. R. T. Campbell, of that firm, succeeded in convincing the Port Trust that a bulk oil installation was a thing. The local conditions in Bombay being different from those in presidential towns, it is no wonder that great difficulty was found in securing a safe and proper site. Once, when the installation was in its infancy, it was urged that there might be spontaneous combustion under the influence of tropical heat. A very simple

system of ventilation removes the risk of danger from explosive gas. There are four tanks, each being of 2,500 tons, or 698,120 gallons capacity. The tanks are sixty-four feet in diameter by thirty-five feet in height. On the eastern end of the reclamation a pier is constructed, alongside which the tank oil steamer was moored and discharged her cargo by means of a ten-inch main, branching off into two seven-inch delivery pipes, communicating first with a small settling tank, and then with the storage tanks. The tanks themselves are surrounded by an embankment nine feet six inches high, five feet thick at the base, and two feet at the top, so that, besides preventing the tanks from being tampered with, the very remote possibility of a tank bursting is provided for. In convenient proximity to the tanks, but, of course, outside the high embankment, a filling shed, one hundred and five feet long by sixty-five feet broad, is also erected, and is connected with the tank main by four-inch pipes. Adjoining the filling shed a tinning factory is constructed, a hundred and fifty feet long by forty-five broad, while a large storage godown is built at the eastern extremity of the company's land. The Port Trust are building a line of railway connecting the installation compound with the Great Indian Peninsula and

### IMPORTS AND EXPORTS FOR APRIL.

THOUGH the Board of Trade returns for last month show a much larger volume of trade than in the same month last year, still the items affecting the chemical trade do not show any material improvement. In the imports, chemicals, dyestuffs, and oils, are less in value, while the exports of alkali, salt, and chemical manures still show a declension in both quantities and values.

#### IMPORTS OF FOREIGN AND COLONIAL PRODUCE.

| ARTICLES.                   | Quantities.      |            |
|-----------------------------|------------------|------------|
|                             | 1895.            | 1896.      |
| Margarine .....             | Cwt. 73,366      | 72,574     |
| Copper Ore and Regulus..... | Tons. 17,197     | 13,295     |
| Pyrites.....                | " 50,572         | 64,701     |
| Tin .....                   | Cwt. 42,383      | 36,518     |
| Alkali .....                | " 10,942         | 16,742     |
| Brimstone .....             | " 33,453         | 29,903     |
| Dyes, Coal Tar .....        | L. 64,075        | 57,247     |
| Saltpetre .....             | Cwt. 22,414      | 39,608     |
| Petroleum .....             | Gall. 14,907,872 | 14,380,459 |
| Turpentine .....            | Cwt. 13,758      | 2,547      |
| Guano .....                 | Tons. 6,384      | 225        |
| Nitrate of Soda .....       | " 38,078         | 11,173     |
| Paraffin .....              | " 70,182         | 50,528     |
| Rosin .....                 | Cwt. 108,940     | 196,319    |
| Tallow and Stearine.....    | " 191,097        | 200,828    |
| Oil Seed Cake .....         | Tons. 21,033     | 26,680     |
| Wood Pulp.....              | " 21,509         | 24,197     |

#### EXPORTS OF BRITISH AND IRISH MANUFACTURES.

| ARTICLES.               | Quantities.   |           |
|-------------------------|---------------|-----------|
|                         | 1895.         | 1896.     |
| Alkali .....            | Cwt. 484,511  | 464,040   |
| Cement .....            | Tons. 36,115  | 30,150    |
| Coal and Coke .....     | " 2,420,693   | 2,651,260 |
| Copper, all kinds ..... | Cwt. 105,262  | 99,515    |
| Iron and Steel .....    | Tons. 225,459 | 289,333   |
| Chemical Manures .....  | " 26,187      | 25,448    |
| Oils, seed .....        | " 5,821       | 5,188     |
| Salt .....              | " 57,104      | 46,040    |

**DESTRUCTION OF A CANDLE FACTORY.**—The candle factory of MM. David Imbert and Cie., at Vaise, a suburb of Lyons, was completely destroyed by fire last week. The loss is estimated at several hundred thousand francs.

**EXTENSION OF THE FOYERS ALUMINIUM WORKS TO GREENOCK.**—The British Aluminium Company have arranged for the acquisition of certain water rights and the erection of a factory at Greenock, to be carried on in conjunction with the works at Foyers.







more than where it was not used." At Cavan, "where used, most satisfactory results followed." In Dungannon county Tyrone, the potato crop was exceptionally good, in quantity and quality; this is attributed to the favourable weather and the fact that the spraying of the potato crop "has become a practice in the neighbourhood." In Tobercurry district, "some farmers used the spraying machine with good results." In Mohill district, county Leitrim, "potatoes the uplands, where they were not injured by the frosts and protected by spraying materials (strawsonite)." These in eight or nine different counties, all indicate the Irish farmer to be on the alert, and it cannot be doubted that a more resort to the operation of spraying—of which there are arguments—must add substantially to the productive capacity of

evidence, allied to but distinct from the foregoing, is the report of the Council of the Royal Dublin Society which was issued. Last season a sum of £300. was voted by the Society for the encouragement of potato spraying, and a circular was issued by the Board of Guardians in Ireland. The result was that 202 farmers and over five tons of sulphate of copper were

At the close of the season 109 opinions as to the efficacy of the treatment were received from growers who had resorted to the use of the material. Of these 13 were "very favourable," 80 were "favourable," 15 were "doubtful," and only two as "unfavourable."

#### INSOLUBLE PHOSPHATE.

The importance of soluble phosphate is certainly in a measure over-estimated by most agriculturists, there is undoubtedly good reason to think that generally speaking they fail to sufficiently realise how important a constituent insoluble phosphate may be, consequently an attention to this ingredient will, we feel assured, say the *Express*, result in distinct advantage. A comparatively small amount of insoluble phosphate should easily comprehend that when dissolving mineral bones, and other substances for the production of manures, practically quite impossible to reduce them entirely to a solution, therefore these preparations must always contain portions of more or less altered raw materials which naturally soluble, that is to say, of course, they are not capable of dissolving in water; and manifestly we need hardly point out the inferior value in almost every respect possessed by phosphate soluble over the insoluble variety, so that at least under all circumstances it is advisable to retain only a relatively small amount in the latter condition. Whatever the source from which it is referring now to phosphatic ingredients employed in manure-dissolved fertilisers, the insoluble phosphate occurs as a known to chemists as tribasic or tricalcic phosphate; but in accordance to practical agriculture, the comparative value of any form of bone and that present as undecomposed mineral matter is different; indeed, insoluble phosphate, as we find it in mineral superphosphates, is very commonly considered of little value so far as the buyer is concerned.

Of complete disregard, however, is a course we can announce quite justifiable, because necessarily it must be of great slight use, particularly after the subjection to partial solution by sulphuric acid. To manufacturers the insoluble in such a matter of great moment, the value of these manures is determined solely by the quantity of soluble phosphate obtained; therefore, whatever is left undissolved represents so much waste. But when insoluble in suitable proportion occurs as bone otherwise satisfactory, it has a distinct and useful function in the prolonged action and more lasting attributes of dissolved bone compound, &c., is largely due to this constituent. Here, however, great attention to physical condition is dispensable; properly prepared samples should provide insoluble phosphate, consisting of bone in convenient size pieces, and modified by the decomposing effects of the acid used in the process for after undergoing that process the portion of this chemically dissolved nevertheless assumes a more friable character, its availability to plants being thereby materially increased also uniform distribution in the soil is ensured with greater facility. Consequently bone thus altered will evidently prove far more valuable as a fertilising medium to the same substance in its normal condition, for the practical value of manures is very much upon the properties it has acquired.

It is a mistake to mention that ingredients suitable for furnishing insoluble phosphate are the different varieties of bone meal prepared from either animal or mineral bones; also many phosphatic guanos answer the purpose; but bone ash imperfectly dissolved is hardly at all more available than mineral phosphate under similar conditions, and when present in rough, uneven fragments. Hence evidently very desirable to ascertain the source supplying this component of any manure we purchase, and farmers would be wise to

stipulate that the insoluble phosphate they require shall exist as bone. Clearly enough the percentage of insoluble phosphate in a fertiliser is regulated by the quantity of acid employed in manufacture, the quality of the raw materials dissolved, and a very influential factor, the degree of fineness attained in the preliminary grinding.

We feel constrained to specially remark that the bone dust utilised in making manures is even now, after so much experience has been gained, frequently decidedly too coarse to ensure adequate softening and thorough efficiency; and beyond all doubt the resulting product would be vastly improved by substituting, at least in part a much more finely divided meal. The reason given to account for the presence of these large pieces of bone is that farmers when buying like to see them, and unquestionably this is one cause of the defect; only often the fragments met with are of such dimensions as to remain undecomposed on the land for years, so obviously there is ample room for amendment, and yet to consult sufficiently the fancies and prejudices of purchasers.

At the same time agriculturists should perfectly understand that big masses of visible bone afford no true indication of a manure's excellence, for they may have been added subsequently to dissolving to mineral superphosphate, thus escaping the mixing with and action of the acid; or they perhaps consist of bone ash, which for an unpractised eye is difficult to distinguish from unburnt bone, but whose value when reduced to fine powder even is, as we have observed, much inferior to that commodity, while in either case pieces so rough can virtually render no service to crops, whether at present or in the reasonably near future; consequently, to apply material in this condition amounts literally to wasting valuable phosphate.

### Trade Notes.

**Obituary.**—The death recently took place of *Mr. James Hart*, F.C.S., of Embden-street, Hulme, a well-known microscopist, who held the office of honorary secretary of the Manchester Microscopical Society from 1890 to 1893, when he was elected a vice-president of the society. He was in his forty-ninth year.

**THE DURHAM COAL TRADE COMBINE.**—It appears that the parties to the amalgamation in the Durham coal trade are the Earl of Durham and Messrs. James Joicey and Co. The output of Lord Durham's collieries, 14 in number, is 12,000 tons per day. The purchase money is put down at from £800,000. to £1,000,000., and it is understood that the transfer will become an actual fact on June 1. Messrs. Joicey have at present under their control about 13 collieries employing 4,000 men, and the number employed in Lord Durham's pits is over 8,000, so that when the transfer is effected Messrs. Joicey, of which the leading partner is Sir James Joicey, M.P., will have control over nearly 30 collieries and 12,000 men. The Lambton fleet of steamers, which take in most of the coal won from Lord Durham's pits at Sunderland, are twenty in number.

**ANOTHER GIFT TO THE YORKSHIRE COLLEGE.**—The Court of the Clothworkers' Company of London, at a meeting held on Wednesday last week, resolved to grant a sum of £10,000. for extensions in connection with the textile industries and dyeing departments of the Yorkshire College, of which they are the founders and generous supporters. They have already expended £33,600. for the building and equipment of these branches of the college, their last gift being in 1892, when they voted £3,500. for new art rooms for the textile industries department. That department was established at the opening of the college in 1874, and the dyeing department was inaugurated in 1880. As the work of these branches has been extended and developed, the Clothworkers' Company have increased their annual subsidies, which now amount to £2,300. These liberal acts of the Clothworkers' Company are spontaneous on their part.

**ARISTOL.**—This product is extracted from tar by Messrs. Friederich Bayer and Co., for the treatment of burns. It is at once an anæsthetic, relieving pain immediately; an antiseptic, keeping the sore in a healthy condition; a stimulant, inducing cicatrisation, hastening the cure, and, unlike iodoform, it produces no injurious effect upon the patient. When the burn is felt, it should be bathed, and thereby disinfected, with a 2 per cent. solution of boric acid (not borax), puncturing with a fine needle all the visible blisters. Then apply with muslin an ointment composed of

Aristol 1 to 2 ounces  
Olive Oil 2 ounces } 1 ounce equals 28 grs.

dissolved and mixed with four ounces of vaseline, and four ounces of lanoline, worked up thoroughly with a spatula upon a smooth surface. This salve should always be kept at hand, as well as a boric acid solution, so as to be ready for immediate use. Around the muslin is placed a certain thickness of antiseptic cotton, then a sheet of rubber, the whole being enclosed in a bandage. The pain almost immediately disappears, and the cure follows quickly, even when the burn has been caused by chemicals.



**THE STABILITY OF STEEL GAS CYLINDERS.**—At the recent Conversazione of the Royal Society, among the various exhibits the mangled gas-bottles, the results of experiments on steel gas cylinders, exhibited by the Gas Cylinder Committee lately nominated at the request of the Home Office (*vide C.T.J.*, 459, p. 158), were of the utmost practical interest to lecturers using lime-light lanterns. They showed (1) the danger of using hard or unannealed steel for gas-cylinders; (2) the extraordinary amount of violent ill-treatment to which a good soft annealed cylinder may be subjected without destruction, even when charged to 120 atmospheres; (3) the effect of very great internal pressure steadily applied, in this case due to the expansion of liquefied ammonia gas which completely filled the cylinder when cold; (4) the violently destructive character of the explosion of mixed gases under pressure which no practicable cylinder can withstand.

**THE RESPONSIBILITIES OF MILK-SELLERS.**—In the Queen's Bench Division of the High Court, before the Lord Chief Justice and Mr. Justice Wills, an appeal was recently heard of Messrs. Spiers and Pond, Limited, against a conviction by a London police magistrate for selling milk which was deficient in cream to the extent of 17 per cent. A sanitary inspector had obtained a glass of milk at the Farringdon-street Station refreshment-rooms, kept by the appellants, and on analysis it was found to be deficient in cream to the extent named. The magistrate thereupon convicted Messrs. Spiers and Pond, imposing a fine of 40s., with £3. 3s. costs. This was the decision appealed against. It was alleged on behalf of the appellants that they had on the counter where the milk was supplied a notice to the effect that, though they purchased all milk sold by them under a warranty of its purity, they were unable to guarantee it as either new, pure, or with all its cream. The notice was held to be a sufficient "disclosure of alteration" within section 9 of the Food and Drugs Act. Their lordships were of opinion that the appellants had done all they could reasonably be expected to do to comply with the provisions of the Act, and quashed the conviction.

### FOREIGN REMITTANCES.

Owing to the inconvenience created by the various ways in which foreign subscriptions are remitted, we respectfully beg to inform subscribers that a *Crossed MONEY ORDER* is the most satisfactory method of remitting, both for them and ourselves. In the case of a Money Order, a letter advising us of same should always be sent, otherwise, owing to post-office formalities, much delay in tracing and acknowledging foreign remittances is inevitably entailed in this country.

## Market Reports.

### TAR AND AMMONIA PRODUCTS.

Benzols are firmer, the price for 90's now being 2s. 2d., and 50/90's 1s. 10d., prompt. Carbolic acids are rather firmer, there being a fair demand for 60% crude at 2s. 2d., while 40% crystals remain at 7d. There is no change in crude naphtha or solvent, the current quotations being identical with those of last week. Creosote and anthracene are quiet at recent prices. Pitch is easy at 32s. 6d., f.o.b. East Coast.

Sulphate of ammonia is quiet, and buyers are shy. Makers, however, are not pressing sulphate on the market. Values have receded somewhat, closing quotations being: London outside makes £8. 2s. 6d., Liverpool £8. 1s. 3d., Hull £8., and Leith £8. to £7. 18s. 9d., all prompt. The forward quotation for Beckton is £8. 10s. Nitrate of soda quiet.

### MISCELLANEOUS CHEMICAL MARKET.

Business in the alkali trade is not particularly brisk. For caustic soda values, however, remain stationary, as follows—f.o.b. Liverpool, 77%, £9. 7s. 6d. per ton; 74%, £8. 7s. 6d.; 70%, £7. 7s. 6d. per ton; 60%, £6. 7s. 6d., 10 ton lots and upwards. Ammonia alkali unchanged at £3. 7s. 6d. per ton, bags, f.o.r., and soda crystals quiet at 35s. per ton. Bicarbonate steady at £6. 12s. 6d., f.o.b. Leblanc soda ash steady at 1d. per degree, casks, f.o.r., and 1½d., f.o.b., for ordinary qualities. Saltcake in better demand at 22s. 6d. per ton, f.o.r. Lancashire. Bleaching powder £6. 15s. to £7. per ton f.o.r., and f.o.b. Lancashire for softwood casks, and £7. to £7. 5s., hardwoods, f.o.b. Sulphate of copper again higher at £19. for spot delivery. Recovered sulphur £3. 12s. 6d. per ton, f.o.r. Chlorate of potash 4½d. per lb.; soda 6d. per lb. For potash, caustic and carbonate, there is a continued good inquiry, and prices are well maintained. The position of brown acetate of lime is unchanged. In grey acetate here is more business being done. Acetates of lead and soda quiet,

and with a slightly easier tendency. Prussiate of potash 7d. per lb., according to make. Cyanide, 95/97%, 1s. 2d. per supplies of white powdered arsenic are still insufficient to meet demands, and price is £23. to £24. for spot delivery, and £23. Carbolic acid crystals quiet at 7d. per lb., in quantity. Cyanides there is only moderate business doing, and no change. Nitrate of soda slightly firmer at 8s. per cwt. Ammonia generally, keep steady in price. There are no general ideas as yet of any improvement in the demand for miscellaneous chemicals.

### REPORT ON MANURE MATERIAL.

The market remains without any special feature to note. Demand is fairly well maintained for early delivery, but supplies and any change in prices is rather in favour of buyers. Mineral phosphates are offered freely, and it is reported that South Carolina bone may be had under 6d. per unit—probably 5¼d.; 75/80% rock may be had under 6d. per unit, in cargoes, c.i.f. to ports, Summer-Autumn shipment. These exceptionally low prices only rendered possible by the exceptionally low freights now obtaining. For shipment 1897 some advance would have to be paid. Nothing to report in River Plate bones. Bombay bone meal may be had at £3. 12s. 6d., ex quay, on spot, and there are selling prices for shipment; but buyers' ideas, as the season is about to open, are about £3. 10s. There is nothing to report in crushed bones. Nitrate of soda is steady at 7s. 10½d. per cwt., quality, and 8s. for fine on spot. Due cargoes are worth 10½d. ordinary quality, and Autumn shipment 8s. 4½d. according to position. Home prepared dried blood is inquired for at 7s. 6d. per unit, f.o. rails at works.

### LIVERPOOL OIL AND COLOUR MARK.

**OILS.**—Palm oil is dull, and Lagos has been sold on £18. 10s., soft oils £17. 7s. 6d., and hard £17. There is a fair amount of business doing in olive, and the better grades are for prices ranging from £29. to £35. Linseed is quiet, makes being quoted 19s. 6d. to 20s. 6d. per cwt. in export. Cottonseed, though dull and lacking in activity, is steady whole, at 16s. 6d. to 17s. 3d. per cwt. Castor oil is quietly 2½d. for good seconds ex quay, and 2½d. to 2½d. for pressure French 2½d. to 2½d. per lb. spot. Tallow is depressed, prices unsettled; North American is quoted about 17s. 6d. to 18s. 6d., South 21s. 6d. to 22s., and Australian 19s. to 21s. per cwt. keeps firm, common being steady, at 4s. 9d. to 5s. per cwt. Turpentine are firm in price, there being a moderate demand; per cwt. Petroleum quiet; American 6¼d. to 7½d., and refined 5¼d. per gallon.

**COLOURS.**—Prices are steady, and practically without change. Ochres: Oxfordshire, common, £10., medium, £12., best, £14.; Derbyshire, common, 40s.; medium, 50s., best, 60s.; Wexford, 90s., seconds, 50s., and common, 18s.; Irish, Devonshire 45s.; French, J.C., 65s. Umber: 40s. to 45s. White lead Red lead unchanged. Venetian red, £6. to £10. Cobalt oxide, 9s. 9d.; black, 9s.; blue, 6s. Oxide of iron: £7.; medium, £10.; finest, £20. Zinc oxide, £22. 10s. to £24.

### THE METAL MARKETS.

**LONDON, WEDNESDAY.**—Pig iron, quiet: Scotch closed at 46s. 1½d.; Middlesbrough, 37s. 3d. cash, and 47s. 1½d. Copper, steady: Chili bars, G. O. B.'s and G. closed at £46. 3s. 9d. to £46. 8s. 9d. cash, and £46. 10s. to three months. Tin, steady: Straits closed at £59. 15s. to cash, and £60. 7s. 6d. to £60. 17s. 6d. three months; Austral English ingots, £63. 10s. to £64. Lead, quiet: Spanish, £11. English, £11. 2s. 6d. to £11. 5s.; Silesian spelter, ordinary, £11. Nickel, 1s. 2½d. Antimony, £30. 5s. Quicksilver: Fir £6. 15s.; second hands, £6. 14s. Copper shares, steady 2½d. to 2½d.; Copiapo, 2½d. to 2½d.; Libiola, 2½d. to 3; M Barry, 3 to 3½; Rio Tinto, 20½d. to 20½d.; Tharsis, 5½d. to 5½d.

**GLASGOW, WEDNESDAY.**—Market steady, with good Scotch done at 46s. 2d., 46s. 1d., and 46s. 1½d. cash. 46s. 4d. and 46s. 3½d. one month; closing with buyers at 4 cash, sellers ask 46s. 2d. Cleveland done at 37s. 5½d. and one month; closing with buyers at 37s. 3d. cash, sellers ask; Cumberland hematite done at 47s. 2d. cash, also at 47s. 4d. on closing with buyers at 47s. 1½d. cash, sellers ask 47. Middlesbrough hematite closes with buyers at 44s. 6d. cash ask 44s. 7½d.



## TYNE CHEMICAL REPORT.

TUESDAY.

als are in fair demand and rather more business is doing. nerals are unaltered. Soda crystals, £2. 2s. 6d. per ton, ght, locally. Caustic, 76/77%, £9. 5s. per ton; 70%, £7. 10s. 5s. per ton. Sulphur firm at £3. 17s. 6d. per ton. ing powder, softs, £7. 5s. per ton, nett; hards, £7. 10s. per ton, astic soda, 76/77%, £9. 5s. per ton, nett; do., 70%, £7. 15s. ett; recovered sulphur, 2 cwt. bags, £3. 17s. 6d. per ton, nett; 48%, £4. per ton, nett; do., 50%, £4. 3s. 4d. per ; do., 56%, £4. 6s. 8d. per ton, nett; alkali, 36%, £2. 15s. ett; white alkali, 48%, £4. 10s. per ton, nett; do., 50%, per ton, nett; do., 52%, £5. per ton, nett; hyposulphite of cwt. casks, £6. 5s. per ton, nett; do., 1 cwt. kegs, £7. ett; silicate of soda, 75° Tw., £2. 12s. 6d. per ton, nett; Tw., £3. per ton, nett; do., 140° Tw., £3. 7s. 6d. ett; soda crystals, casks, £2. 2s. 6d. per ton, ght; do., 2 cwt. bags, £2. 2s. 6d. per ton, nett weight; of potash, 5d. per lb., less 6%; pearl hardening, ton, nett; pure white sulphate of alumina, £3. 17s. 6d. ett; blanc fixe, £7. 5s. per ton, nett; chloride of barium, ystals, £6. 15s., per ton, nett; do., 90/95%, crude calcined, ton, nett; sulphide of barium, crystals, £4. 15s. per ton, nett; of alumina, £30. per ton, nett; aluminate of soda, £30. ett.

—South Durham salt is quoted at 9s. per ton, f.o.b. Tees, r business doing.

5.—The market continues quiet. There is now a full demand team coals, while for gas coals the consumption is rapidly . Coke is in fuller demand, both locally and for export. humbrian steam, 8s. 3d. to 8s. 6d. per ton; second qualities, 7s. 6d. per ton; small steam 3s. 9d. to 4s. per ton; house-, dull, 9s. 6d. to 10s. per ton; gas coals, 6s. 6d. to 6s. 9d. coke firm, 15s. to 16s. per ton.

## L PAINT, OIL, AND COLOUR REPORT.

TUESDAY.

—The trade is much quieter, with values little altered. The Imports into Hull up to date include the following:— 238,289 quarters; against 195,490 quarters a year ago. 31,696 quarters; against 55,854 quarters. Cottonseed, ns; against 80,034 tons. Olive oil, 9,785 casks; against s. Rape oil, 1,748 casks; against 4,238 casks. Oilcakes, ; against 5,907 tons. Tallow, 17,070 cwts.; against 4,899 nes, 3,624 tons; against 1,921 tons. Turpentine 6,221 against 4,300 barrels. Linseed oil, after advancing to 18s, the spot, closes easier at 17s. 10½d.; May-August and December is quoted at 18s. 3d.; boiled and refined, from . per ton extra. Export for the week has been 2,680 cwts. ston oil remains very flat, spot is 14s. 6d., naked; and there for May-August at 15s. Crude, 13s. 4½d., naked, spot; arrels 30s. per ton extra and casks £1. Export of refined oil ek has been 7,200 cwts. Castor oil, from 2½d. per lb. for re. Spirits of turpentine, 22s. Olive oil in better demand, s unchanged. Cod oil, £17. to £19. per ton. American soap, 70% fatty acids, £11. per ton in barrels. Margarine cools and kegs, 34s. to 84s. In Lard, owing to low prices, the ars to be buying largely for stock; American pails, 26s. 6d. ; firkins, 25s. 6d. to 26s. 6d. Locomotive grease, £10. per

—Linseed cakes are quiet, 95% pure, £5. 15s. to £5. Americans, £5.; Russians, £5. 12s. 6d. Oil cakes, £4. Cotton cakes in small request, but steady in price; best . 17s. 6d.; seconds, £3. 12s. 6d. Rape cakes unchanged. 3.—Makers, especially those who cater for a home trade, are the continued open weather stimulating business in these Prices are unaltered.

## WEST OF SCOTLAND CHEMICALS.

GLASGOW, TUESDAY.

ie middle of last week the feeling in sulphate of ammonia t the improved value was not to hold good, and quotations eded, though not quite back to the recent bottom price. procurable value is only round about £8. prompt, Leith, t two of the less hopeful holders willing to take £7. 18s. 9d. thing doing on the forward basis. Makers of mineral burn- t on important matter last week, and decided to lower the penny per gallon all round, to hold at least during the con- the off season. The price may be raised again before next assumption begins, but that will be as circumstances then raffin wax has been in unsatisfactory request, and the price

has given way a little. The market for general chemicals does not improve, and is indeed inclined to idling. Prices, though unchanged, are tending downwards.

Chief prices current are:—Soda crystals, £2. 2s. 6d., nett, Tyne; soda ash, 48/56°, £3. 15s. to £4. 15s. nett, Tyne; white alkali, 48/52°, £4. 10s. to £5. nett, Tyne; alum in lump, £5. to £5. 5s. nett, Glasgow; caustic soda, white, 74° £8. 7s. 6d., 70/72° £7. 7s. 6d., 60/62° £6. 7s. 6d., and cream 60/62° £6. 7s. 6d., all nett, Liverpool; bleaching powder, £7. nett, Tyne; saltcake, 23s.; borax, English, refined, £20., and boracic acid, £30. nett, Glasgow; bicarbonate of soda, 5-cwt. casks, £6. 10s., and 1-cwt. casks £6. 15s. nett, Liverpool; bichromate of potash, 4½d. nett, for Scotch and English deliveries (for export, 4½d. nett, f.o.b. Glasgow); bichromate of soda, 3¼d. nett, for Scotch and English deliveries (for export, 3½d. nett, f.o.b. Glasgow); chloride of potash, 5d. less 5%, Liverpool; nitrate of soda, 8s to 8s. 3d.; sulphate of ammonia, £7. 18s. 9d. to £8. prompt, f.o.b. Leith; salammniac, first and second white, £39. and £37. nett, any port; sulphate of copper, £18. 15s. less 5%, Liverpool; paraffin scale, hard, 1½d. to 1¾d., and soft, 1¾d. to 2d. per lb.; paraffin wax, 125° semi-refined, 2½d. to 2¾d. per lb.; paraffin spirit (naphtha), 7d. per gallon; paraffin oil (burning) No. 1, 6d., and crystal, 6¼d., at works, for Scotch buyers (English sales about ½d. lower); ditto (lubricating) 865° £5., 885° £5. 10s. to £6., and 890/895° £6. to £6. 10s. Week's imports of sugar at Greenock were 5,840 bags beet unrefined; 12,490 bags cane unrefined, and 2,366 baskets cane unrefined.

## New Companies.

**E. C. Cassels, Ltd.**—CAPITAL, £2,000., in £1. shares. This company has been formed to acquire and carry on the business of soap manufacturers, etc., and dealers in toilet requisites.

**Bailey Processes Co., Ltd.**—CAPITAL, £20,000., in £1. shares. This company has been formed to carry on the business of manufacturers and dealers in white lead, paints, colours, varnishes, etc. The subscribers to the memorandum of association are:—J. W. Douglas, 9, Arundel-street, Strand, chemist; J. T. Smith, 5, Arundel-street, Strand, accountant; W. A. Borwick, 5, Arundel-street, Strand, clerk; A. M. Waller, 5, Arundel-street, Strand, clerk; C. A. Hood, 8, Lacon-road, E. Dulwich, clerk; F. W. Robinson, 3, Grove-road, Brixton, civil servant; J. E. Barber, 45, Gateley-road, Brixton, clerk.

**Best Bros., Ltd.**—CAPITAL, £20,000., in £5. shares. This company has been formed to carry on the business of cement and gypsum manufacturers, quarriers, etc. The subscribers to the memorandum of association are:—T. J. Best, Kansas, U.S.A., cement manufacturer; W. H. Revis, 120, West Thirteenth-street, New York City, manufacturer; J. Best, Kirkby More, Westmoreland, quarry owner; W. C. Best, Shipley, Yorkshire, yarn agent; W. Dobson, Shipley, Yorkshire, leather merchant; W. Young, 11, Dale-street, Manchester, yarn merchant; H. E. P. Ackroyd, Old Bank Chambers, Bradford, solicitor.

**Kent, Good and Co. (Marsh Manure Works), Ltd.**—CAPITAL, £6,000., in £1. shares. This company has been formed to acquire the business of Kent, Good and Co., and to trade as artificial manure manufacturers, etc., at St. Philip's Marsh, Bristol. The subscribers to the memorandum of association are:—A. Grindell, Pile Marsh, St. George, Bristol, horse dealer; J. Davis, Eugene-street, Bristol, grease refiner; H. Jenkins, Ashley-road, Bristol, cab proprietor; W. T. Good, Dorset Villa, Brislington, Bristol, gentleman; T. Osborne, 52, Castle-street, Bristol, undertaker; W. H. Long, 34, Broad-street, Bristol, accountant; A. Kent, St. Philip's Marsh, Bristol, manufacturer.

**W. B. Dick and Co., Ltd.**—CAPITAL, £150,000., in shares of £10. each. This company has been formed to carry on the business of seed crushers, oil merchants, and refiners, paint and varnish manufacturers, and oilcake dealers, etc. The subscribers to the memorandum of association are:—C. E. Dick, Redstone, West Kirby, Cheshire, merchant; B. Dick, 207, Piccadilly, W., merchant; L. B. Page, 13, Waller-road, New Cross, secretary; C. R. Wise, 2, Luxmore-street, Brockley, salesman; W. H. Booth, 46, Mildmay Park, N., book-keeper; T. McSweeney, 13, Tudor-road, Upton Park, E., agent; G. D. Hand, 75, Godolphin-road, W., accountant.

**Colloid, Ltd.**—CAPITAL, £10,000., in £1. shares. This company has been formed to manufacture and deal in colloid and other chemical products. The subscribers to the memorandum of association are:—E. J. Mills, D.Sc. F.R.S., 5, Hillhead-square, Glasgow, Professor of Technical Chemistry; F. Hedderwick, Rockland, Helensburgh, paper-maker; A. Hughes, 121, W. George-street, Glasgow, chartered accountant; A. Foulis, 180, St. Vincent-street, Glasgow, solicitor; J. Mason, 59, Harriet-street, Pollokshaws, Glasgow, bookkeeper; P. W. Hendrie, 45, Bentinck-street, Glasgow, law clerk; A. C. Walker, 256, Renfrew-street, Glasgow, law clerk.



# IMPORTS OF CHEMICAL PRODUCTS AT THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

**LONDON.**

Week ending May 2nd.

|                                      |                                        |  |
|--------------------------------------|----------------------------------------|--|
| <b>Acetic Acid</b> —                 |                                        |  |
| Holland, 151 pks.                    | A. & M. Zimmermann                     |  |
| <b>Acetone</b> —                     |                                        |  |
| Holland, 10 dms.                     | A. & M. Zimmermann                     |  |
| " 2 cks.                             | Becker & Wagner                        |  |
| Germany, 2                           | Thames S. T. & L. Co.                  |  |
| Holland, 1                           | F. Claydon & Co.                       |  |
| <b>Alkali</b> —                      |                                        |  |
| France, 50 c.                        | J. Harrison                            |  |
| <b>Alumina Sulphate</b> —            |                                        |  |
| Holland, 65 cks.                     | H. Wallace & Co.                       |  |
| <b>Alumite</b> —                     |                                        |  |
| Sydney, £303                         | J. Allen & Co.                         |  |
| <b>Ammonium Chloride</b> —           |                                        |  |
| Holland, 10 cks.                     | H. Lorenz                              |  |
| <b>Antimony Ore</b> —                |                                        |  |
| France, 15 t.                        | Hunt & Kerr                            |  |
| Portugal, 50                         | I. Bamber                              |  |
| A. Turkey, 34                        | French & Smith                         |  |
| France, 3 c.                         | Girard Frs. & Co.                      |  |
| <b>Asbestos</b> —                    |                                        |  |
| Germany, £14                         | Craven & Co.                           |  |
| Holland, 3                           | G. Rahn & Co.                          |  |
| " 60                                 | Phillips & Graves                      |  |
| <b>Barium Chloride</b> —             |                                        |  |
| Germany, 3 cks.                      | Petri Brs.                             |  |
| <b>Barium Peroxide</b> —             |                                        |  |
| Germany, 10 cs.                      | L. & I. D. Jt. Co.                     |  |
| <b>Barytes</b> —                     |                                        |  |
| Belgium, 400 bgs.                    | Burrell & Co.                          |  |
| Holland, 69 cks.                     | Taylor Brs. & Co.                      |  |
| Belgium, 103                         | J. L. Lyon & Co.                       |  |
| Holland, 10                          | W. Harrison & Co.                      |  |
| Germany, 44                          | "                                      |  |
| Belgium, 122                         | "                                      |  |
| Holland, 34                          | E. J. Diggins                          |  |
| " 25                                 | H. Keller & Co.                        |  |
| <b>Bleaching Soda</b> —              |                                        |  |
| Germany, 150 cs.                     | H. Lambert                             |  |
| <b>Bone Meal</b> —                   |                                        |  |
| E. Indies, 5 t.                      | A. Hunter & Co.                        |  |
| " 300                                | H. G. Cooper & Co.                     |  |
| " 100                                | Fox, Roy & Co.                         |  |
| <b>Camphor</b> —                     |                                        |  |
| Germany, 4 pks.                      | L. & I. D. Jt. Co.                     |  |
| <b>Caoutchouc</b> —                  |                                        |  |
| Thursday Is., 8 c.                   | McIlwraith & Co.                       |  |
| Denmark, 4                           | M. D. Co.                              |  |
| Aden, 1                              | Hale & Son                             |  |
| U. States, 51                        | Stiebel Brs.                           |  |
| France, 52                           | "                                      |  |
| U. States, 20                        | Girard Brs. & Co.                      |  |
| Borneo, 25                           | Lunham & Moore                         |  |
| Singapore, 128                       | Elkan & Co.                            |  |
| Belize, 6                            | Huttenbach & P. Belize Estate & P. Co. |  |
| <b>Ibo</b> , 33                      | Forbes, Forbes & Co.                   |  |
| <b>Carbonic Acid</b> —               |                                        |  |
| Germany, 75 pks.                     | Krayer, Back & Co.                     |  |
| <b>Castor Oil</b> —                  |                                        |  |
| E. Indies, 25 cs.                    | Arracan Co., Ltd.                      |  |
| " 4                                  | Patry & Pasteur                        |  |
| " 180 cks.                           | Ross & Deering                         |  |
| " 44                                 | J. Owen                                |  |
| France, 20                           | Lucas & Spencer's                      |  |
| Belgium, 37 brls.                    | W. F. R. G. Hall & Co.                 |  |
| France, 10                           | Anderson, Weber & Co.                  |  |
| " 20                                 | J. T. Morton                           |  |
| <b>Chemicals</b> (otherwise under).— |                                        |  |
| U. States, £5                        | Grindlay & Co.                         |  |
| Germany, 907                         | A. & M. Zimmermann                     |  |
| Belgium, 20                          | T. Ronaldson & Co.                     |  |
| Holland, 26                          | J. Barber & Co.                        |  |
| " 12                                 | G. Rahn & Co.                          |  |
| Belgium, 206                         | T. Palmer                              |  |
| Germany, 69                          | H. Lambert                             |  |
| Norway, 263                          | R. Greening                            |  |
| Belgium, 10                          | O. Scholzig                            |  |
| Germany, 395                         | T. H. Lee                              |  |
| " 45                                 | T. Palmer                              |  |
| " 15                                 | L. & I. D. Jt. Co.                     |  |

**Cream of Tartar**—

|                  |                    |
|------------------|--------------------|
| France, 2 brls.  | McNamara & Co.     |
| Holland, 90 kgs. | Kirkpatrick & Co.  |
| France, 3 cks.   | B. & F. Wf. Co.    |
| " 5              | M. Ashby, Ltd.     |
| " 10             | W. C. Bacon & Co.  |
| " 4 cs.          | C. Atkins & Nisbet |

**Creosote**—

|                |                 |
|----------------|-----------------|
| France, 3 pks. | F. F. Alexander |
|----------------|-----------------|

**Dextrine**—

|                   |                    |
|-------------------|--------------------|
| Germany, 150 bgs. | Herrn, Peron & Co. |
|-------------------|--------------------|

**Dyestuffs**—

|                     |                              |
|---------------------|------------------------------|
| <b>Argols</b>       |                              |
| Italy, 827 bgs.     | B. Jacob & Sons              |
| Spain, 572          | "                            |
| <b>Cochineal</b>    |                              |
| Canaries, 12 bgs.   | Sperling & Williams          |
| " 2                 | J. W. Borland                |
| <b>Cutch</b>        |                              |
| Singapore, 550 cs.  | L. & I. D. Jt. Co.           |
| " 25                | Phillips & Graves            |
| " 550               | H. Johnson & Sons            |
| U. States, 20 bxs.  | Huttenbach & Co.             |
| <b>Divi Divi</b>    |                              |
| E. Indies, 105 bgs. | Culverwell, Brooks & Co.     |
| " 75                | L. & I. D. Jt. Co.           |
| " 400               | Walker, Munzie, & Co.        |
| <b>Extracts</b>     |                              |
| Denmark, 1 cs.      | D. Currie & Co.              |
| " 2 cks.            | Sorensen & Co.               |
| " 23 pks.           | Crosse & Blackwell           |
| " 15                | Bailey & Leatham             |
| Germany, 3 brls.    | Blumann & Stern              |
| U. States, 5        | W. Burton & Sons             |
| France, 120 pks.    | B. & F. Wf. Co.              |
| Austria, 210        | A. J. Humphery               |
| Ceylon, 3           | R. G. Hall & Co.             |
| France, 100 cks.    | L. J. Levinstein & Sons      |
| Germany, 31         | Fleming's Oil & Chemical Co. |

**Infusorial Earth**—

|             |                     |
|-------------|---------------------|
| Sydney, £10 | L. & N.-W. Rly. Co. |
|-------------|---------------------|

**Lamp Black**—

|                 |                |
|-----------------|----------------|
| Sweden, 50 cks. | H. & F. Raison |
|-----------------|----------------|

**Lead Acetate**—

|                 |            |
|-----------------|------------|
| Germany, 6 cks. | Petri Brs. |
|-----------------|------------|

**Magnesia**—

|                   |                      |
|-------------------|----------------------|
| Germany, 227 pks. | Berger, Kahler & Co. |
|-------------------|----------------------|

**Manure**—

|               |         |
|---------------|---------|
| Holland, 1 t. | J. Owen |
|---------------|---------|

**Methyl Alcohol**—

|                 |            |
|-----------------|------------|
| Belgium, 8 dms. | Stein Brs. |
|-----------------|------------|

**Mica**—

|                   |                    |
|-------------------|--------------------|
| E. Indies, £3 88g | W. M. Smith & Sons |
| " 255             | E. Davis & Co.     |

**Molasses**—

|                     |                           |
|---------------------|---------------------------|
| U. States, 180 cks. | 990 c. Deering & Robottom |
|---------------------|---------------------------|

**Naphtha**—

|                 |             |
|-----------------|-------------|
| Belgium, 9 dms. | Leach & Co. |
|-----------------|-------------|

**Ochre**—

|                |                   |
|----------------|-------------------|
| Holland, 1 ck. | Phillips & Graves |
| France, 23     | W. Harrison & Co. |
| " 50 brls.     | Burrell & Co.     |

**Phosphate Rock**—

|                  |                      |
|------------------|----------------------|
| France, 320 t.   | T. Farmer & Co.      |
| " 320            | W. E. Cole           |
| U. States, 2,518 | Anglo-Contl. G. Wks. |
| Belgium, 550     | West & Penrose       |
| " 110            | Odams Manure Co.     |
| Algeria, 810     | A. Hunter & Co.      |
| Belgium, 220     | G. Allen             |

**Pitch**—

|                   |                        |
|-------------------|------------------------|
| Holland, 28 brls. | H. Hill & Sons         |
| France, 47        | Poth, Hille & Co.      |
| Germany, 68       | C. B. Leighton         |
| " 68              | Fellows, Morton, & Co. |

**Plumbago**—

|                               |                        |
|-------------------------------|------------------------|
| Ceylon, 64 cks.               | Cayzer, Irvine, & Co.  |
| " 36                          | Anderson, Weber, & Co. |
| " 60                          | Doulton & Co.          |
| " 72g J. Thredder, Son, & Co. |                        |
| " 106                         | C. Rowbotham           |
| " 124                         | R. G. Hall & Co.       |

**Potassium Bicarbonate**—

|                 |                    |
|-----------------|--------------------|
| Holland, 7 cks. | A. & M. Zimmermann |
|-----------------|--------------------|

**Potassium Carbonate**—

|               |                 |
|---------------|-----------------|
| France, 54 c. | J. A. Reid      |
| " 9 cks.      | W. E. Cole      |
| Germany, 110  | J. Barber & Co. |
| " 367 c.      | Beresford & Co. |
| " 367 c.      | W. G. Blagden   |

**Potassium Chloride**—

|                   |                          |
|-------------------|--------------------------|
| Germany, 200 bgs. | W. G. Blagden            |
| " 508             | Bessler, Waechter, & Co. |

**Pumice Stone**—

|               |                     |
|---------------|---------------------|
| Holland, 1 t. | Herrn, Peron, & Co. |
|---------------|---------------------|

**Gamboge**—

|               |                 |
|---------------|-----------------|
| France, 5 cs. | S. Figgis & Co. |
|---------------|-----------------|

**Glucose**—

|                     |                          |
|---------------------|--------------------------|
| U. States, 120 pks. | 720 c. Page, Son, & East |
|---------------------|--------------------------|

**Glue**—

|                |                              |
|----------------|------------------------------|
| " 2,050        | 2,110 G. Clark & Sons        |
| " 155          | 850 Soundy & Sons            |
| " 1,650        | 1,650 Fellows, Morton, & Co. |
| " 50           | 310 C. Southwell & Co.       |
| " 50           | 284 J. Keiller & Son, Ltd.   |
| " 4,000        | 4,000 Pearce, Pelly, & Co.   |
| " 200          | 1,120 T. M. Duche & Sons     |
| Germany, 100   | 200 R. G. Hall & Co.         |
| " 200          | 200 Trier, Meyer, & Co.      |
| U. States, 750 | 1,067 Ross & Deering         |
| " 1,500        | 1,500 E. Dixon               |
| " 25           | 135 Ohlenschlager Brs.       |
| " 50           | 287 Union L. Co., Ltd.       |
| " 250          | 1,444 E. & T. Pink           |
| " 2,450        | 7,188 R. G. Hall & Co.       |

**Infusorial Earth**—

|             |                     |
|-------------|---------------------|
| Sydney, £10 | L. & N.-W. Rly. Co. |
|-------------|---------------------|

**Lamp Black**—

|                 |                |
|-----------------|----------------|
| Sweden, 50 cks. | H. & F. Raison |
|-----------------|----------------|

**Lead Acetate**—

|                 |            |
|-----------------|------------|
| Germany, 6 cks. | Petri Brs. |
|-----------------|------------|

**Magnesia**—

|                   |                      |
|-------------------|----------------------|
| Germany, 227 pks. | Berger, Kahler & Co. |
|-------------------|----------------------|

**Manure**—

|               |         |
|---------------|---------|
| Holland, 1 t. | J. Owen |
|---------------|---------|

**Methyl Alcohol**—

|                 |            |
|-----------------|------------|
| Belgium, 8 dms. | Stein Brs. |
|-----------------|------------|

**Mica**—

|                   |                    |
|-------------------|--------------------|
| E. Indies, £3 88g | W. M. Smith & Sons |
| " 255             | E. Davis & Co.     |

**Molasses**—

|                     |                           |
|---------------------|---------------------------|
| U. States, 180 cks. | 990 c. Deering & Robottom |
|---------------------|---------------------------|

**Naphtha**—

|                 |             |
|-----------------|-------------|
| Belgium, 9 dms. | Leach & Co. |
|-----------------|-------------|

**Ochre**—

|                |                   |
|----------------|-------------------|
| Holland, 1 ck. | Phillips & Graves |
| France, 23     | W. Harrison & Co. |
| " 50 brls.     | Burrell & Co.     |

**Phosphate Rock**—

|                  |                      |
|------------------|----------------------|
| France, 320 t.   | T. Farmer & Co.      |
| " 320            | W. E. Cole           |
| U. States, 2,518 | Anglo-Contl. G. Wks. |
| Belgium, 550     | West & Penrose       |
| " 110            | Odams Manure Co.     |
| Algeria, 810     | A. Hunter & Co.      |
| Belgium, 220     | G. Allen             |

**Pitch**—

|                   |                        |
|-------------------|------------------------|
| Holland, 28 brls. | H. Hill & Sons         |
| France, 47        | Poth, Hille & Co.      |
| Germany, 68       | C. B. Leighton         |
| " 68              | Fellows, Morton, & Co. |

**Plumbago**—

|                               |                        |
|-------------------------------|------------------------|
| Ceylon, 64 cks.               | Cayzer, Irvine, & Co.  |
| " 36                          | Anderson, Weber, & Co. |
| " 60                          | Doulton & Co.          |
| " 72g J. Thredder, Son, & Co. |                        |
| " 106                         | C. Rowbotham           |
| " 124                         | R. G. Hall & Co.       |

**Potassium Bicarbonate**—

|                 |                    |
|-----------------|--------------------|
| Holland, 7 cks. | A. & M. Zimmermann |
|-----------------|--------------------|

**Potassium Carbonate**—

|               |                 |
|---------------|-----------------|
| France, 54 c. | J. A. Reid      |
| " 9 cks.      | W. E. Cole      |
| Germany, 110  | J. Barber & Co. |
| " 367 c.      | Beresford & Co. |
| " 367 c.      | W. G. Blagden   |

**Potassium Chloride**—

|                   |                          |
|-------------------|--------------------------|
| Germany, 200 bgs. | W. G. Blagden            |
| " 508             | Bessler, Waechter, & Co. |

**Pumice Stone**—

|               |                     |
|---------------|---------------------|
| Holland, 1 t. | Herrn, Peron, & Co. |
|---------------|---------------------|

**Rosin**—

|                               |                 |
|-------------------------------|-----------------|
| U. States, 1,000 brls.        | J. Knight & Son |
| " 254 C. Tennant, Sons, & Co. |                 |
| Belgium, 30                   | J. Watt & Son   |
| France, 30                    | "               |

**Rosin Oil**—

|                   |                |
|-------------------|----------------|
| France, 330 brls. | C. Price & Co. |
|-------------------|----------------|

**Saltpetre**—

|                       |                          |
|-----------------------|--------------------------|
| E. Indies, 4,048 bgs. | S. Figgis & Co.          |
| " 298                 | L. & I. D. Jt. Co.       |
| " 637                 | Henckel du Buisson & Co. |

**Sheep Dip**—

|              |                    |
|--------------|--------------------|
| Bluff, 6 cs. | L. & I. D. Jt. Co. |
|--------------|--------------------|

**Soda**—

|                   |                    |
|-------------------|--------------------|
| Belgium, 4,820 c. | R. Waters          |
| " 200             | R. W. Greeff & Co. |
| Holland, 4        | G. Rahn & Co.      |

**Sodium Acetate**—

|                 |           |
|-----------------|-----------|
| France, 32 cks. | H. Lorenz |
|-----------------|-----------|

**Sodium Bichromate**—

|                 |                  |
|-----------------|------------------|
| Germany, 400 c. | Perkins & Thomas |
|-----------------|------------------|

**Sodium Hyposulphite**—

|                  |                    |
|------------------|--------------------|
| Holland, 80 kgs. | R. W. Greeff & Co. |
| " 100            | Petri Brs.         |

**Starch**—

|                     |                      |
|---------------------|----------------------|
| U. States, 75 brls. | Beck & Pollitzer     |
| Belgium, 230 cs.    | F. Claydon & Co.     |
| France, 263 pks.    | B. & F. Wf. Co.      |
| " 16 brls.          | White Brs.           |
| U. States, 300 bgs. | R. G. Hall & Co.     |
| Germany, 50 cs.     | Phillips & Graves    |
| Belgium, 280        | T. H. Lee            |
| Holland, 350        | "                    |
| " 172               | Phillips & Graves    |
| Belgium, 135        | A. B. Curtis & Co.   |
| " 140               | Leach & Co.          |
| " 390               | E. & T. Pink         |
| U. States, 550 pks. | Baxter & Hoare       |
| 100 bgs.            | W. G. Taylor & Co.   |
| Holland, 1,101 cs.  | Little & Johnson     |
| Germany, 600        | 500 pks. Horne & Co. |
| U. States, 100 pks. | Ohlenschlager Nes    |
| " 434               | Oswego Co.           |

**Stearine**—

|                    |                    |
|--------------------|--------------------|
| Holland, 145 bgs.  | S. J. Clark        |
| " 145              | Phillips & Graves  |
| France, 100        | H. Hill & Sons     |
| Belgium, 5         | A. B. Curtis & Co. |
| France, 130        | Walbaum & Tosselli |
| U. States, 25 cks. | W. Balchin         |
| France, 400        | W. E. Cole         |

**Sulphate**—

|                  |                   |
|------------------|-------------------|
| Belgium, 54 cks. | W. Harrison & Co. |
|------------------|-------------------|

**Sulphur Ore**—

|               |                   |
|---------------|-------------------|
| Belgium, 2 t. | H. Johnson & Sons |
|---------------|-------------------|

**Talc**—

|             |                       |
|-------------|-----------------------|
| France, £50 | Stobbs, Wilson, & Co. |
|-------------|-----------------------|

**Tartaric Acid**—

|                  |                   |
|------------------|-------------------|
| Holland, 40 pks. | Kirkpatrick & Co. |
| France, 30       | Gregory & Co.     |
| Italy, 10        | B. & F. Wf. Co.   |

**Ultramarine**—

|            |     |          |                     |
|------------|-----|----------|---------------------|
| Germany,   | 600 | 500 pks. | Horne & Co.         |
| U. States, | 100 | pks.     | Ohlenschlager Bros. |



|                        |                   |                           |
|------------------------|-------------------|---------------------------|
| <b>Pomice Stone</b> —  |                   |                           |
| Leghorn,               | 27 pks. 32 bls.   | Wilson, Sons, & Co., Ltd. |
| "                      | 10 cks.           |                           |
| <b>Saltpetre</b> —     |                   |                           |
| Antwerp,               | 135 bgs.          | Wilson, Sons, & Co., Ltd. |
| Hamburg,               | 100 kgs.          | "                         |
| <b>Soap</b> —          |                   |                           |
| Naples,                | 21 cs.            | Wilson, Sons, & Co., Ltd. |
| Marseilles,            | 2                 | "                         |
| <b>Soapstone</b> —     |                   |                           |
| Genoa,                 | 150 bgs.          | Wilson, Sons, & Co., Ltd. |
| <b>Starch</b> —        |                   |                           |
| New York,              | 100 bgs.          | Hutchinson & Son          |
| Amsterdam,             | 40 cs.            | "                         |
| Rotterdam,             | 108               | "                         |
| Bremen,                | 1,534             | Veltmann & Co.            |
| <b>Talc</b> —          |                   |                           |
| Leghorn,               | 10 bls.           | Wilson, Sons, & Co., Ltd. |
| <b>Tallow</b> —        |                   |                           |
| Boston,                | 114 cks. 270 tcs. | Wilson, Sons, & Co., Ltd. |
| <b>Tartar</b> —        |                   |                           |
| Marseilles,            | 1 ck.             | Wilson, Sons, & Co., Ltd. |
| Bordeaux,              | 8                 | Rawson & Robinson         |
| <b>Tartaric Acid</b> — |                   |                           |
| Rotterdam,             | 4 cks.            | Hutchinson & Son          |
| <b>Treacle</b> —       |                   |                           |
| Boston,                | 1,500 bls.        | Wilson, Sons, & Co., Ltd. |
| New York,              | 425               | "                         |
| <b>Turpentine</b> —    |                   |                           |
| Libau,                 | 1 brl.            |                           |
| <b>Ultramarine</b> —   |                   |                           |
| Rotterdam,             | 2 cks.            | Hanger, Watson, & Harris  |
| Bremen,                | 2                 | "                         |
| <b>Varnish</b> —       |                   |                           |
| New York,              | 25 pks.           | Wilson, Sons, & Co., Ltd. |
| "                      | 10 bls.           | "                         |
| <b>Waste Salt</b> —    |                   |                           |
| Hamburg,               | qty.              | Bailey & Leatham          |
| <b>White Lead</b> —    |                   |                           |
| Rotterdam,             | 19 cks.           | Hutchinson & Son          |
| Ghent,                 | 15 bls.           | "                         |
| Amsterdam,             | 12 cks.           | Hutchinson & Son          |
| Antwerp,               | 11                | Bailey & Leatham          |
| <b>Wood Pulp</b> —     |                   |                           |
| Hango,                 | 582 bls.          | J. Good & Sons            |
| Falkenburg,            | 1                 | "                         |
| Stockholm,             | 80                | W. Shipstone & Co.        |
| Drontheim,             | 400               | Wilson, Sons, & Co., Ltd. |
| Christiania,           | 1,537             | "                         |
| Hamburg,               | 80                | Bailey & Leatham          |
| <b>Zinc White</b> —    |                   |                           |
| Rotterdam,             | 25 cks.           | Hutchinson & Son          |

## GLASGOW.

Week ending May 7th.

|                                          |                  |                    |
|------------------------------------------|------------------|--------------------|
| <b>Albumen</b> —                         |                  |                    |
| Hamburg,                                 | 6 cks.           |                    |
| <b>Aniline</b> —                         |                  |                    |
| Rotterdam,                               | 4 bls. 9 bxs.    |                    |
| <b>Aniline Colours</b> —                 |                  |                    |
| Hamburg,                                 | 1 cs.            |                    |
| <b>Arachide Oil</b> —                    |                  |                    |
| Rotterdam,                               | 1 ck.            |                    |
| <b>Barytes</b> —                         |                  |                    |
| Rotterdam,                               | 93 cks.          |                    |
| <b>Bone Meal</b> —                       |                  |                    |
| Bombay,                                  | 1,750 bgs.       |                    |
| <b>Bromine</b> —                         |                  |                    |
| Hamburg,                                 | 5 cs.            |                    |
| <b>Caoutchouc</b> —                      |                  |                    |
| Hamburg,                                 | 3 cks.           |                    |
| <b>Castor Oil</b> —                      |                  |                    |
| Marseilles,                              | 58 bls. 4 cs.    |                    |
| Antwerp,                                 | 63 cks.          |                    |
| <b>Chemicals (otherwise undescribed)</b> |                  |                    |
| Hamburg,                                 | 1 cs.            |                    |
| <b>Colours</b> —                         |                  |                    |
| Rotterdam,                               | 7 cks. 3 cs.     |                    |
| "                                        | 5 55 pks.        |                    |
| <b>Cream of Tartar</b> —                 |                  |                    |
| Marseilles,                              | 8 cks.           |                    |
| <b>Dextrine</b> —                        |                  |                    |
| Hamburg,                                 | 50 bgs.          |                    |
| <b>Dyestuffs</b> —                       |                  |                    |
| Alizarine                                |                  |                    |
| Rotterdam,                               | 45 bls. 210 pks. |                    |
| Argols                                   |                  |                    |
| Bordeaux,                                | 20 bgs.          |                    |
| Cutch                                    |                  |                    |
| Rangoon,                                 | 1,335 bxs.       | P. Henderson & Co. |
| "                                        | 30               |                    |
| <b>Extracts</b> —                        |                  |                    |
| Antwerp,                                 | 1 ck.            |                    |
| <b>Myrobolams</b>                        |                  |                    |
| Bombay,                                  | 620 bgs.         |                    |
| <b>Dyestuffs (otherwise undescribed)</b> |                  |                    |
| Rotterdam,                               | 2 bxs.           | J. Rankine & Son   |
| <b>Farina</b> —                          |                  |                    |
| Hamburg,                                 | 233 bgs.         |                    |
| Antwerp,                                 | 20               |                    |
| <b>Glue</b> —                            |                  |                    |
| Rouen,                                   | 4 cks.           |                    |
| Rotterdam,                               | 40 bgs.          |                    |
| Hamburg,                                 | 1 5 cs.          |                    |
| Rotterdam,                               | 19 bskts. 30     | J. Rankine & Son   |
| <b>Ochre</b> —                           |                  |                    |
| Marseilles,                              | 21 bls. 33 cks.  |                    |
| Rouen,                                   | 45               |                    |
| <b>Phosphate</b> —                       |                  |                    |
| Antwerp,                                 | 1,000 bgs.       |                    |
| <b>Potash</b> —                          |                  |                    |
| Hamburg,                                 | 100 cks.         |                    |
| Rotterdam,                               | 24               | J. Rankine & Son   |
| <b>Rosin</b> —                           |                  |                    |
| Baltimore,                               | 850 bls.         |                    |
| New York,                                | 500              |                    |
| <b>Saltpetre</b> —                       |                  |                    |
| Hamburg,                                 | 5 cks. 40 kgs.   |                    |

|                          |                   |                   |
|--------------------------|-------------------|-------------------|
| <b>Soap</b> —            |                   |                   |
| Rotterdam,               | 1 cs.             |                   |
| <b>Sodium Nitrate</b> —  |                   |                   |
| Rotterdam,               | 4 cks.            |                   |
| <b>Sodium Sulphate</b> — |                   |                   |
| Antwerp,                 | 4 cks.            |                   |
| <b>Starch</b> —          |                   |                   |
| New York,                | 900 bxs. 600 bgs. |                   |
| Amsterdam,               | 270 cs.           |                   |
| Rotterdam,               | 162               | J. Rankine & Son  |
| <b>Stearine</b> —        |                   |                   |
| Amsterdam,               | 124 bgs.          |                   |
| <b>Tartar</b> —          |                   |                   |
| Bordeaux,                | 8 cks.            |                   |
| <b>Waste Salt</b> —      |                   |                   |
| Hamburg,                 | 538 bgs. 540 cks. |                   |
| <b>White Lead</b> —      |                   |                   |
| Rotterdam,               | 38 cks.           |                   |
| "                        | 70                | J. Rankine & Son  |
| <b>Wood Pulp</b> —       |                   |                   |
| Hommelvik,               | 2,000 bls.        |                   |
| Gefle,                   | 6,532             | Henderson & Craig |
| Hamburg,                 | 224               |                   |
| Christiania,             | 366               |                   |
| <b>Zinc Oxide</b> —      |                   |                   |
| Rotterdam,               | 50 cks.           | J. Rankine & Son  |
| <b>Zinc White</b> —      |                   |                   |
| Rotterdam,               | 125 cks.          | J. Rankine & Son  |

## TYNE.

Week ending May 2nd.

|                        |          |                             |
|------------------------|----------|-----------------------------|
| <b>Alum Earth</b> —    |          |                             |
| Hamburg,               | 129 cks. | Tyne S. S. Co.              |
| <b>Barytes</b> —       |          |                             |
| Antwerp,               | 200 bgs. | Tyne S. S. Co.              |
| <b>Cod Oil</b> —       |          |                             |
| Bergen,                | 10 bls.  |                             |
| <b>Colours</b> —       |          |                             |
| Rotterdam,             | 2 bls.   | Tyne S. S. Co.              |
| <b>Cryolite</b> —      |          |                             |
| Copenhagen,            | 2 cks.   |                             |
| <b>Glue</b> —          |          |                             |
| Antwerp,               | 1 ck.    | Tyne S. S. Co.              |
| <b>Limestone</b> —     |          |                             |
| Antwerp,               | 6 cs.    | Tyne S. S. Co.              |
| <b>Phosphate</b> —     |          |                             |
| Port Royal,            | 4,166 t. | Langdale's Chem. Manure Co. |
| Bona,                  | 2,450    | "                           |
| <b>Pitch</b> —         |          |                             |
| Rotterdam,             | 7 cks.   | Tyne S. S. Co.              |
| <b>Soap</b> —          |          |                             |
| Rotterdam,             | 10 cs.   | Tyne S. S. Co.              |
| <b>Starch</b> —        |          |                             |
| Antwerp,               | 16 cs.   | Tyne S. S. Co.              |
| Rotterdam,             | 112      | "                           |
| <b>Stearine</b> —      |          |                             |
| Antwerp,               | 13 bgs.  | Tyne S. S. Co.              |
| <b>Uranium Oxide</b> — |          |                             |
| Hamburg,               | 1 cs.    | Tyne S. S. Co.              |
| <b>White Lead</b> —    |          |                             |
| Antwerp,               | 11 cks.  | Tyne S. S. Co.              |
| <b>Wood Pulp</b> —     |          |                             |
| Gothenburg,            | 100 bls. |                             |
| Christiania,           | 120      |                             |

|                        |         |                |
|------------------------|---------|----------------|
| <b>Zinc Oxide</b> —    |         |                |
| Antwerp,               | 10 bls. | Tyne S. S. Co. |
| <b>Zinc Sulphate</b> — |         |                |
| Gothenburg,            | 3 cks.  |                |

## GOOLE.

Week ending April 29th.

|                                          |                 |     |
|------------------------------------------|-----------------|-----|
| <b>Alkali</b> —                          |                 |     |
| Calais,                                  | 7 cks.          |     |
| <b>Alizarine</b> —                       |                 |     |
| Rotterdam,                               | 26 bls.         |     |
| <b>Alumina Sulphate</b> —                |                 |     |
| Rotterdam,                               | 15 cks.         |     |
| <b>Colours</b> —                         |                 |     |
| Ghent,                                   | 22 cks. 2 cs.   |     |
| Amsterdam,                               | 9               |     |
| Hamburg,                                 | 53 12           |     |
| <b>Dyestuffs (otherwise undescribed)</b> |                 |     |
| Rotterdam,                               | 412 cks. 61 cs. |     |
| Boulogne,                                | 14 3 29         | ks. |
| <b>Farina</b> —                          |                 |     |
| Rotterdam,                               | 200 bgs.        |     |
| Hamburg,                                 | 100             |     |
| Delfzijl,                                | 500             |     |
| <b>Glucose</b> —                         |                 |     |
| Hamburg,                                 | 28 cks.         |     |
| <b>Glue</b> —                            |                 |     |
| Boulogne,                                | 3 cks.          |     |
| Hamburg,                                 | 5               |     |
| <b>Logwood</b> —                         |                 |     |
| Hamburg,                                 | 49 t.           |     |
| <b>Phosphate</b> —                       |                 |     |
| Ghent,                                   | 2,500 bgs.      |     |
| <b>Potash</b> —                          |                 |     |
| Rotterdam,                               | 16 cks.         |     |
| Dunkirk,                                 | 4 10 dms.       |     |
| Calais,                                  | 43              |     |
| Antwerp,                                 | 2               |     |
| <b>Saltpetre</b> —                       |                 |     |
| Rotterdam,                               | 100 bgs.        |     |
| Hamburg,                                 | 2 cks.          |     |
| <b>Starch</b> —                          |                 |     |
| Ghent,                                   | 170 cs.         |     |

## GRIMSBY.

Week ending May 2nd.

|                                          |                 |  |
|------------------------------------------|-----------------|--|
| <b>Caoutchouc</b> —                      |                 |  |
| Hamburg,                                 | 19 cs. 6 pks.   |  |
| Rotterdam,                               | 2               |  |
| <b>Chemicals (otherwise undescribed)</b> |                 |  |
| Rotterdam,                               | 10 cks. 20 pks. |  |
| Antwerp,                                 | 15 cs.          |  |
| <b>Colours</b> —                         |                 |  |
| Rotterdam,                               | 20 bgs.         |  |
| Antwerp,                                 | 10 cks. 27 pks. |  |
| Hamburg,                                 | 11 5 cs.        |  |
| <b>Dyes</b> —                            |                 |  |
| Rotterdam,                               | 15 pks.         |  |
| Hamburg,                                 | 44 12 cs.       |  |
| Antwerp,                                 | 55 1            |  |
| <b>Glue</b> —                            |                 |  |
| Dieppe,                                  | 27 cks.         |  |
| <b>Wood Pulp</b> —                       |                 |  |
| Gothenburg,                              | 340 bls.        |  |

EXPORTS OF CHEMICAL PRODUCTS  
OF  
THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

## LONDON.

Week ending May 6th.

|                             |            |     |
|-----------------------------|------------|-----|
| <b>Alkali</b> —             |            |     |
| Algoa Bay,                  | 5 t.       | £24 |
| Fremantle,                  | 4 c.       | 12  |
| Mauritius,                  | 2 10       | 14  |
| <b>Ammonia</b> —            |            |     |
| Cape Town,                  | 10 pks.    | £11 |
| Brisbane,                   | 7 c.       | 12  |
| New York,                   | 27 cks.    | 132 |
| <b>Ammonia (Liquid)</b> —   |            |     |
| Natal,                      | 1 t. 12 c. | £46 |
| Dusseldorf,                 | 25 dms.    | 320 |
| Adelaide,                   | 1 1        | 18  |
| <b>Ammonium Carbonate</b> — |            |     |
| Algoa Bay,                  | 5 c.       | £11 |
| Yokohama,                   | 10 cks.    | 80  |
| Rangoon,                    |            | 7   |

|                            |            |       |
|----------------------------|------------|-------|
| <b>Ammonium Chloride</b> — |            |       |
| Varna,                     | 6 c.       | £10   |
| Constantinople,            | 1 t        | 35    |
| <b>Ammonium Sulphate</b> — |            |       |
| Philadelphia,              | 25 t.      | £240  |
| Cullera,                   | 126 12 c.  | 1,045 |
| Trinidad,                  | 22 10      | 183   |
| Antigua,                   | 36 7       | 259   |
| Dunkirk,                   | 10 3       | 85    |
| Ostend,                    | 50         | 400   |
| Hamburg,                   | 150        | 1,160 |
| <b>Anhydrous Ammonia</b> — |            |       |
| Natal,                     | 1 t. 14 c. | £81   |
| <b>Barium Nitrate</b> —    |            |       |
| Bombay,                    | 7 c.       | £7    |
| <b>Bone Ash</b> —          |            |       |
| Sydney,                    | 8 c.       | £14   |
| <b>Boracic Acid</b> —      |            |       |
| Wellington,                | 2 cks.     | £6    |

|                           |            |      |
|---------------------------|------------|------|
| <b>Borax</b> —            |            |      |
| Algoa Bay,                | 5 t.       | £102 |
| Brisbane,                 | 5 cs.      | 10   |
| <b>Calcium Chloride</b> — |            |      |
| Natal,                    | 4 t. 4 c.  | £20  |
| <b>Camphor</b> —          |            |      |
| New York,                 | 1 t.       | £209 |
| Hamburg,                  | 1 14 c.    | 325  |
| <b>Carbolic Acid</b> —    |            |      |
| Sydney,                   | 5 c.       | £28  |
| New York,                 | 20 cks.    | 150  |
| Rotterdam,                | 5 t. 15    | 112  |
| Auckland,                 | 1          | 3    |
| Wellington,               | 4          | 10   |
| Melbourne,                | 50 dms.    | 13   |
| Brisbane,                 | 100        | 31   |
| <b>Caustic Soda</b> —     |            |      |
| Brisbane,                 | 16 t. 2 c. | £120 |
| Melbourne,                | 8 3        | 47   |
| Algoa Bay,                | 4 8        | 83   |

|                                          |            |           |
|------------------------------------------|------------|-----------|
| Natal,                                   | 1 9        | 38        |
| Sulina,                                  | 11         | 8         |
| Cape Town,                               | 3          | 5         |
| E. London,                               | 1 9        | 36        |
| Lyttelton,                               | 5 6        | 29        |
| <b>Chemicals (otherwise undescribed)</b> |            |           |
| Higo,                                    | 2 t. 10 c. | £18       |
| Cologne,                                 | 2 cks.     | 12        |
| Brisbane,                                | 9 pks.     | 30 cs. 32 |
| Bombay,                                  | 23         | 8 200     |
| Boulogne,                                | 5 cks.     | 42        |
| Auckland,                                | 61 pks.    | 141       |
| Wellington,                              |            | 7 99      |
| Sydney,                                  | 4 cks.     | 11        |
| Treport,                                 | 5          | 100       |
| Cadix,                                   |            | 7 90      |
| Hamburg,                                 | 10 12      | 400       |
| Melbourne,                               | 53 pks.    | 96        |
| Cape Town,                               | 7          | 25        |
| Brussels,                                | 2 cks.     | 23        |
| Dunkirk,                                 | 21         | 890       |



|                                     |                   |        |
|-------------------------------------|-------------------|--------|
| <b>Acid—</b>                        |                   |        |
| rdam,                               | 3 c.              | £19    |
| son,                                | 1 kg.             | 14     |
| ay,                                 | 5                 | 20     |
| rp,                                 | 10                | 61     |
| urg, 10 cks.                        | 7                 | 108    |
| g,                                  | 1 cs.             | 4      |
| Town,                               | 1                 | 2      |
| hagen,                              | 10                | 63     |
| Bay,                                | 1                 | 5      |
| els,                                | 5                 | 31     |
| <b>Products—</b>                    |                   |        |
| <b>tarine</b>                       |                   |        |
| line                                | 1 cs.             | £27    |
| y,                                  | 1 cs.             | £9     |
| rdam,                               | 12 dms.           | 45     |
| <b>hracene</b>                      |                   |        |
| ne,                                 | 101 cks.          | £1,244 |
| rdam,                               | 95 cks.           | £412   |
| rdam,                               | 12 dms.           | 130    |
| <b>osote</b>                        |                   |        |
| ork,                                | 10 brls.          | £17    |
| <b>osote Salts</b>                  |                   |        |
| elphia, 1,080 bgs.                  |                   | £192   |
| <b>thialine</b>                     |                   |        |
| ork,                                | 176 cks.          | £196   |
| rk,                                 | 2,122 t.          | £3,039 |
| ork,                                | 100 cks.          | 16     |
| 1,                                  | 399 brls.         | 234    |
| <b>idine</b>                        |                   |        |
| rdam,                               | 26 cks.           | £234   |
| izabeth,                            | 200 dms. 200 kgs. | £12    |
| Bay,                                | 760               | 31     |
| <b>Oil</b>                          |                   |        |
| assa,                               | 70 brls.          | £60    |
| elphia, 1,000 cks.                  |                   | 441    |
| <b>sol</b>                          |                   |        |
| rdam,                               | 25 cks.           | £76    |
| <b>Products (otherwise undes.)</b>  |                   |        |
| Town,                               | 160 kgs.          | £9     |
| y,                                  | 400 dms.          | 83     |
| <b>r Sulphate</b>                   |                   |        |
| ne,                                 | 1 t.              | £18    |
| urne,                               | 1                 | 18     |
| 60                                  |                   | 1,103  |
| in,                                 | 11 c.             | 0      |
| igton,                              | 10                | 10     |
| <b>of Tartar—</b>                   |                   |        |
| and,                                | 10 c.             | £46    |
| church,                             | 3                 | 16     |
| h,                                  | 15                | 76     |
| urne,                               | 1 t.              | 90     |
| berg,                               | 10                | 46     |
| Town,                               | 3                 | 14     |
| y,                                  | 2                 | 10     |
| ne,                                 | 1                 | 95     |
| ntle,                               | 10                | 49     |
| <b>ectants—</b>                     |                   |        |
| y,                                  | 8 cs.             | £41    |
| ne,                                 | 50 dms.           | 16     |
| g,                                  | 150               | 5 cks. |
| <b>iffs (otherwise undescribed)</b> |                   |        |
| ad,                                 | 1 ck.             | £10    |
| <b>c Acid—</b>                      |                   |        |
| Bay,                                | 2 cs.             | £15    |
| <b>ium Sulphate—</b>                |                   |        |
| us,                                 | 5 t.              | £54    |
| rdam,                               | 10 c.             | £10    |
| <b>e—</b>                           |                   |        |
| 2,                                  | 373 t.            | £1,795 |
| ts,                                 | 4                 | 33     |
| aux,                                | 13                | 70     |
| ara,                                | 50                | 550    |
| ville,                              | 9                 | 125    |
| Town,                               | 50                | 127    |
| <b>Acid—</b>                        |                   |        |
| hai,                                | 15 cs.            | £19    |
| <b>en Protoxide—</b>                |                   |        |
| urne,                               | 2 cs.             | £75    |
| <b>Acid—</b>                        |                   |        |
| ta,                                 | 1 t.              | £36    |
| y,                                  | 10 cks.           | 35     |
| <b>Salts—</b>                       |                   |        |
| oa Bay,                             | 21 t.             | £2,308 |
| <b>ium Bicarbonate—</b>             |                   |        |
| ork,                                | 1 t.              | £38    |
| <b>ium Bichromate—</b>              |                   |        |
| deo,                                | 16 c.             | £35    |
| rt,                                 | 5 t.              | 200    |
| <b>ium Carbonate—</b>               |                   |        |
| sol,                                | 12 c.             | £15    |
| <b>ium Chlorate—</b>                |                   |        |
| ay,                                 | 7 c.              | £16    |
| ndon,                               | 10 kgs.           | 20     |
| <b>ium Cyanide—</b>                 |                   |        |
| y,                                  | 10 c.             | £70    |

|                             |            |        |
|-----------------------------|------------|--------|
| Delagoa Bay,                | 3 t.       | 357    |
| New York,                   | 100 cs.    | 747    |
| Algoa Bay,                  | 10         | 1,027  |
| <b>Potassium Prussiate—</b> |            |        |
| New York,                   | 10 cs.     | £167   |
| <b>Salicylic Acid—</b>      |            |        |
| Sydney,                     | 2 cs.      | £42    |
| <b>Saltpetre—</b>           |            |        |
| Vigo,                       | 3 t. 13 c. | £80    |
| Halifax,                    | 13         | 14     |
| E. London,                  | 5          | 6      |
| Algoa Bay,                  | 9          | 10     |
| Napier,                     | 5          | 6      |
| Wellington,                 | 15         | 16     |
| <b>Sheep Dip—</b>           |            |        |
| Stanley,                    | 755 pks.   | £625   |
| Pt. Elizabeth,              | 10 t. 3 c. | 469    |
| Algoa Bay,                  | 2,000 dms. | 250    |
| Cape Town,                  | 850        | 250    |
| <b>Soda—</b>                |            |        |
| Sulina,                     | 1 t. 10 c. | £6     |
| <b>Soda Crystals—</b>       |            |        |
| Nelson,                     | 3 t. 5 c.  | £8     |
| M. Video,                   | 1          | 14     |
| Fremantle,                  | 4          | 6      |
| <b>Sodium Bicarbonate—</b>  |            |        |
| Brisbane,                   | 1 t.       | £13    |
| Nelson,                     | 2          | 15     |
| Algoa Bay,                  | 3          | 37     |
| <b>Sodium Tartrate—</b>     |            |        |
| Montreal,                   | 1 t. 3 c.  | £103   |
| Melbourne,                  | 5 cs.      | 21     |
| <b>St. onium Nitrate—</b>   |            |        |
| Bombay,                     | 9 c.       | £14    |
| <b>Sulphate of Lime—</b>    |            |        |
| Cape Town,                  | 1 t.       | £20    |
| <b>Sulphur—</b>             |            |        |
| Melbourne,                  | 20 cks.    | £8     |
| Bunbury,                    | 1 t.       | 6      |
| Algoa Bay,                  | 54         | 525    |
| <b>Sulphuric Acid—</b>      |            |        |
| Algoa Bay,                  | 75 cs.     | £56    |
| Demerara,                   | 5 t.       | 49     |
| <b>Tartaric Acid—</b>       |            |        |
| Sydney,                     | 5 c.       | £31    |
| Fremantle,                  | 8          | 51     |
| Brisbane,                   | 13         | 10 kgs |
| Yokohama,                   | 1 t. 5     | 155    |

LIVERPOOL.

Week ending May 6th.

|                            |             |      |
|----------------------------|-------------|------|
| <b>Albumen—</b>            |             |      |
| Boston,                    | 4 t. 3 c.   | £28  |
| Genoa,                     | 5           | 20   |
| <b>Alum—</b>               |             |      |
| Beyrout,                   | 13 t. 2 c.  | £65  |
| Valparaiso,                | 2           | 19   |
| Oporto,                    | 2           | 1    |
| Varna,                     | 2           | 9    |
| Naples,                    | 13          | 2    |
| Montreal,                  | 10          | 1    |
| <b>Aluminous Cake—</b>     |             |      |
| Montreal,                  | 24 t. 17 c. | £67  |
| <b>Ammonium Carbonate—</b> |             |      |
| Montreal,                  | 1 t. 12 c.  | £50  |
| Copenhagen,                | 1           | 10   |
| New York,                  | 1           | 8    |
| Paris,                     | 2           | 2    |
| St. Petersburg,            | 4           | 18   |
| <b>Ammonium Chloride—</b>  |             |      |
| Larnaca,                   | 4 c.        | £7   |
| Calamata,                  | 4           | 7    |
| Patras,                    | 2           | 5    |
| Antwerp,                   | 1 t. 12     | 40   |
| Trieste,                   | 1           | 25   |
| Smyrna,                    | 15          | 28   |
| Piræus,                    | 6           | 11   |
| Christiania,               | 15          | 5    |
| Rangoon,                   | 1           | 10   |
| Boston,                    | 4           | 100  |
| Philadelphia,              | 15          | 300  |
| Barcelona,                 | 2           | 2    |
| St. Petersburg,            | 7           | 11   |
| Montreal,                  | 1           | 15   |
| Calcutta,                  | 3           | 104  |
| <b>Ammonium Sulphate—</b>  |             |      |
| Honolulu,                  | 25 t. 14 c. | £217 |
| Santos,                    | 7           | 61   |
| N. Orleans,                | 101         | 6    |
| San Francisco,             | 50          | 479  |
| Bordeaux,                  | 49          | 4    |
| Nantes,                    | 50          | 675  |
| Norfolk,                   | 25          | 17   |
| Barbadoes,                 | 51          | 1    |
| Charente,                  | 151         | 6    |
| Demerara,                  | 141         | 4    |
| Montreal,                  | 12          | 3    |
| Las Palmas,                | 72          | 4    |
| Castellon,                 | 62          | 3    |

|                          |              |             |      |
|--------------------------|--------------|-------------|------|
| New York,                | 30           | 10          | 275  |
| Valencia,                | 227          | 7           | 2    |
| Cartagena,               | 10           | 8           | 3    |
| Genoa,                   | 50           | 4           | 1    |
| <b>Aniline Salts—</b>    |              |             |      |
| Genoa,                   | 1 t. 12 c.   |             | £85  |
| <b>Antimony—</b>         |              |             |      |
| Valencia, de Alcantara,  | 1 t.         | 1 q.        | £30  |
| <b>Arsenic—</b>          |              |             |      |
| Montreal,                | 10 t. 12 c.  |             | £240 |
| <b>Barium Chlorate—</b>  |              |             |      |
| Hamburg,                 | 10 c.        |             | £42  |
| <b>Benzine—</b>          |              |             |      |
| Tunis,                   | 10 brls.     |             | £14  |
| <b>Bleaching Powder—</b> |              |             |      |
| Alexandria,              |              | 10 brls.    |      |
| Ancona,                  | 12 cks.      |             |      |
| Antwerp,                 | 20           |             |      |
| Baltimore,               | 137          |             |      |
| Bombay,                  |              | 8 cs.       |      |
| Boston,                  | 510          |             |      |
| B. Ayres,                | 4            |             |      |
| Callao,                  |              | 6           |      |
| Corunna,                 |              | 9           |      |
| Genoa,                   | 186          |             |      |
| Leghorn,                 | 66           |             |      |
| Lisbon,                  | 32           |             |      |
| Montreal,                | 50           |             |      |
| Newport News,            | 170          |             |      |
| New York,                | 786          |             |      |
| Pasages,                 | 14           |             |      |
| Philadelphia,            | 129          |             |      |
| Piræus,                  | 13           |             |      |
| Rangoon,                 |              | 18          |      |
| Rouen,                   | 44           |             |      |
| San Francisco,           | 50           |             |      |
| San Sebastian,           | 28           |             |      |
| Smyrna,                  | 4            |             |      |
| <b>Bone Ash—</b>         |              |             |      |
| Marseilles,              | 10 t. 1 c.   | 1 q.        | £186 |
| <b>Boracic Acid—</b>     |              |             |      |
| M. Video,                | 1 t.         | 3 q.        | £33  |
| Sydney,                  | 1            | 5 c.        | 39   |
| Rotterdam,               | 3            | 3           | 2    |
| <b>Borax—</b>            |              |             |      |
| M. Video,                | 1 t.         | 2 c.        | 8 q. |
| Santander,               |              | 20          |      |
| Yokohama,                | 3            | 9           | 64   |
| Sydney,                  | 7            |             | 154  |
| Rotterdam,               | 16           | 18          | 340  |
| Antwerp,                 | 39           |             | 810  |
| Dunedin, N.Z.,           |              | 7           | 9    |
| Antofagasta,             | 5 kgs.       |             | 14   |
| <b>Calcium—</b>          |              |             |      |
| Odessa,                  | 20 t.        |             | £44  |
| New York,                | 13           | 8 c.        | 27   |
| <b>Carbolic Acid—</b>    |              |             |      |
| New York,                | 10 cks. 1 c. | 2 q.        | £68  |
| Adelaide,                | 23 cs.       |             | 6    |
| Rotterdam,               | 11 t.        |             | 533  |
| Genoa,                   |              | 2           | 9    |
| Rosario,                 |              | 2           | 23   |
| B. Ayres,                |              | 1           | 3    |
| Hamburg,                 |              | 4           | 17   |
| Pt. Elizabeth,           | 20 dms.      |             | 21   |
| Baltimore,               | 1 t. 11 t.   | 16          | 2    |
| 8 cs.                    |              |             | 627  |
| Rouen,                   | 11           | 7           | 146  |
| Newport News,            | 5            | 17          | 325  |
| <b>Caustic Potash—</b>   |              |             |      |
| New York,                | 8 t. 15 c.   |             | £220 |
| <b>Caustic Soda—</b>     |              |             |      |
| Alexandria,              | 43 dms.      |             |      |
| Alicante,                | 30           |             |      |
| Amsterdam,               | 190          |             |      |
| Ancona,                  | 20           |             |      |
| Bahia,                   | 20           |             |      |
| Baltimore,               | 953          |             |      |
| Barcelona,               | 350          |             |      |
| Bari,                    | 128          |             |      |
| Bilbao,                  | 115          |             |      |
| Bombay,                  | 27           |             |      |
| Boston,                  | 75           |             |      |
| Brisbane,                | 87           |             |      |
| Callao,                  | 96           |             |      |
| Constantinople,          | 34           |             |      |
| Copenhagen,              | 5            |             |      |
| Corfu,                   | 30           |             |      |
| Corunna,                 |              |             |      |
| Fairwater,               | 237          |             |      |
| Galatz,                  | 15           |             |      |
| Hamburg,                 | 390          |             |      |
| Higo,                    | 152          |             |      |
| Leghorn,                 | 35           |             |      |
| Lisbon,                  | 95           |             |      |
| Libau,                   | 60           |             |      |
| Malta,                   | 22           |             |      |
| Manila,                  | 70           |             |      |
| Montreal,                | 55           |             |      |
| N. Orleans,              | 50           |             |      |
| New York,                | 670          |             |      |
| Norrkoping,              | 10           | 25 bks. 150 |      |

|                                          |              |             |       |
|------------------------------------------|--------------|-------------|-------|
| Oporto,                                  | 30           |             |       |
| Para,                                    | 17           |             |       |
| Paris,                                   | 55           |             |       |
| Philadelphia,                            | 205          |             |       |
| Rangoon,                                 | 40           | 15 pks.     |       |
| San Francisco,                           | 200          |             |       |
| Samarang,                                | 128          |             |       |
| Santos,                                  | 4            |             |       |
| Seville,                                 | 106          |             |       |
| Sourabaya,                               | 50           |             |       |
| Stockholm,                               | 2            |             |       |
| Stettin,                                 | 108          |             |       |
| Talcahuano,                              | 20           |             |       |
| Tarragona,                               |              | 100         |       |
| Trieste,                                 |              | 45          |       |
| Valparaiso,                              | 50           |             |       |
| Venice,                                  | 30           |             |       |
| Vigo,                                    |              | 10          |       |
| Yokohama,                                | 80           |             |       |
| <b>Chemicals (otherwise undescribed)</b> |              |             |       |
| Rotterdam,                               | 1 t.         |             | £33   |
| Montreal,                                | 2            |             | 82    |
| St. Petersburg,                          | 5            |             | 600   |
| Odessa,                                  | 5            |             | 165   |
| Christiania,                             |              | 4 c. 2 q.   | 8     |
| Amsterdam,                               |              | 6           | 11    |
| Calcutta,                                | 59           | 8           | 158   |
| Stettin,                                 | 1            | 6           | 43    |
| New York,                                | 5            | 7           | 171   |
| Philadelphia,                            | 13           | 12          | 435   |
| <b>China Clay—</b>                       |              |             |       |
| Baltimore,                               | 150 cks.     |             |       |
| Boston,                                  | 2,580        | 225 bgs.    |       |
| Montreal,                                | 50           |             |       |
| Philadelphia,                            | 50           | 200         |       |
| Rio de Janeiro,                          | 110          |             |       |
| Sydney, N.S.W.,                          | 20           |             |       |
| <b>Chromium Trioxide—</b>                |              |             |       |
| Antwerp,                                 | 1 c.         |             | £6    |
| <b>Citric Acid—</b>                      |              |             |       |
| Honolulu,                                | 1 c.         |             | £6    |
| St. Petersburg,                          | 2 t. 5       |             | 279   |
| <b>Coal Products—</b>                    |              |             |       |
| <b>Aniline</b>                           |              |             |       |
| St. Nazaire,                             | 4 dms.       |             |       |
| <b>Aniline Colours</b>                   |              |             |       |
| Barcelona,                               | 1 cs. 4 kgs. |             |       |
| Boston,                                  | 1            | 3           |       |
| Calcutta,                                | 5            |             |       |
| Montreal,                                |              | 8 cks.      |       |
| Yokohama,                                | 2            |             |       |
| <b>Aniline Oil</b>                       |              |             |       |
| Barcelona,                               | 10 cks.      |             |       |
| <b>Aniline Salts</b>                     |              |             |       |
| Barcelona,                               | 19 cks.      |             |       |
| Boston,                                  |              | 15 cs.      |       |
| Genoa,                                   | 6            |             |       |
| <b>Anthracene</b>                        |              |             |       |
| Rotterdam,                               | 11 cks.      |             |       |
| <b>Creosote Oil</b>                      |              |             |       |
| Lisbon,                                  | 225 brls.    |             |       |
| <b>Pitch</b>                             |              |             |       |
| Galatz,                                  | 12 t. 5 c.   |             |       |
| Kurrachee,                               | 51 brls.     |             |       |
| Sulina,                                  | 70           |             |       |
| Vigo,                                    | 100          |             |       |
| <b>Tar</b>                               |              |             |       |
| Galatz,                                  | 6 t. 3 c.    |             |       |
| Kurrachee,                               | 27 brls.     |             |       |
| Penang,                                  | 120          | 100 runlets |       |
| St. Nazaire,                             | 2 cks.       |             |       |
| Santander,                               | 4            |             |       |
| Singapore,                               | 200 pks.     |             |       |
| <b>Cobalt Oxide—</b>                     |              |             |       |
| Antwerp,                                 | 3 q.         |             | £30   |
| <b>Copper Sulphate—</b>                  |              |             |       |
| Tarragona,                               | 10 t. 2 c.   |             | £170  |
| Kurrachee,                               | 1            |             | 16    |
| Rio de Janeiro,                          |              | 9           | 8     |
| Marseilles,                              | 29           | 10          | 470   |
| Vigo,                                    | 13           | 2           | 1 q.  |
| Bari,                                    | 4            | 18          | 78    |
| Naples,                                  | 85           | 14          | 7     |
| Genoa,                                   | 173          | 4           | 1     |
| Venice,                                  | 116          |             | 1,836 |
| Paris,                                   | 14           | 18          | 3     |
| Lisbon,                                  | 51           | 18          | 1     |
| Ancona,                                  | 34           | 19          | 3     |
| Leghorn,                                 | 52           | 10          | 3     |
| Cette,                                   | 28           | 18          | 480   |
| Trieste,                                 | 2            |             | 33    |
| Algiers,                                 | 4            | 16          | 74    |
| Oporto,                                  | 25           | 5           | 2     |
| Bordeaux,                                | 264          | 15          | 3     |
| Nantes,                                  | 138          | 15          | 1     |
| <b>Copperas—</b>                         |              |             |       |
| San Francisco,                           | 27 t. 9 c.   | 3 q.        | £59   |
| Tipoli,                                  | 6            |             | 9     |
| <b>Disinfectants—</b>                    |              |             |       |
| Alexandria,                              | 3 cs.        |             | £30   |
| Calcutta,                                | 6            | 4 c.        | 15    |
| New York,                                | 19           | 1 q.        | 15    |
| Madras,                                  | 10           |             | 10    |



|                                                       |                                           |                                        |                                      |                                                       |                                                        |                                                                                                           |                                         |                                    |                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                              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| <b>Dried Blood—</b><br>Gd. Canary, 5 t. 3 c. 1 q. £33 | <b>Iron Oxide—</b><br>B. Ayres, 22 t. £50 | <b>Guano—</b><br>Las Palmas, 10 t. £47 | <b>Lime—</b><br>Lagos, 8 t. 3 c. £19 | <b>Magnesium Chloride—</b><br>Bombay, 18 t. 11 c. £45 | <b>Magnesium Sulphate—</b><br>Rio de Janeiro, 150 kgs. | <b>Manure—</b><br>Bordeaux, 16 c. £5<br>Sourabaya, 36 t. 4 350<br>Gd. Canary, 20 165<br>Las Palmas, 12 89 | <b>Nitric Acid—</b><br>Taltal, 6 cs. £6 | <b>Ochre—</b><br>Kingston, 11 cks. | <b>Oxalic Acid—</b><br>Rangoon, 1 kg. £5<br>Rosario, 2 c. 4<br>Boston, 6 t. 10 1 q. 207 | <b>Paint—</b><br>Alexandria, 10 brls.<br>Amsterdam, 5 dms. 6 kgs. 2 cs.<br>Antwerp, 42 19<br>Billao, 2 lxs.<br>B. Ayres, 8 cks. 95 cs.<br>Cadiz, 100<br>Calcutta, 30<br>C.C. Castle, 20 133 1 brl<br>Constantinople, 1 pkge.<br>Corunna, 2<br>Demerara, 15<br>Ferrol, 17 dms.<br>Genoa, 32<br>Halifax, 13 cks. 28 1 cs.<br>Hamburg, 17<br>Lagos, 3<br>La Plata, 15 20<br>M. Video, 15 4<br>Montreal, 239 brls.<br>New York, 41 177<br>Pachuca, 108<br>Panama, 10<br>Para, 34 40 1<br>Parnahyba, 7<br>Pernambuco, 10<br>Quebec, 15<br>Kangoon, 4<br>Rio de Janeiro, 184<br>St. Thomas, W I, 2<br>San Juan, 2 tcs. 50 2<br>Smynrna, 350<br>Sulina, 3<br>Trieste, 30 dms.<br>Valparaiso, 55<br>Vera Cruz, 1<br>Wellington, N.Z., 2 | <b>Painters' Colours—</b><br>Akassa, 13 kgs.<br>Alexandria, 3 cs. 35 brls. 140 kgs 51 dms.<br>Algoa Bay, 8<br>Bremen, 400 bgs.<br>Calcutta, 11<br>Cape Town, 18 140 kgs. 10 dms.<br>Cartagena, 8 cks.<br>Christiania, 62 12 40 pks<br>Colon, 4 100<br>Elmina, 8<br>Gothenburg, 100 bgs.<br>Guayaquil, 66<br>Hamburg, 3 100<br>Ibrail, 50<br>Manaos, 10<br>M. Video, 79<br>Montreal, 8 45 dms.<br>Newport News, 105<br>New York, 1 cs. 1<br>St. John's, Nfld., 14 cs 10<br>Valparaiso, 39 cs. 2 cks. 5 brls. | <b>Paraffin Wax—</b><br>Tetuan, 2 cs. | <b>Phosphates—</b><br>Montreal, 10 t. £19 | <b>Phosphorus—</b><br>Shanghai, 15 c. £150 | <b>Picric Acid—</b><br>N. Orleans, 3 t. 2 q £290 | <b>Potashes—</b><br>B. Ayres, 1 t. 2 c. £21 | <b>Potassium—</b><br>Barcelona, 33 lbs. £42 | <b>Potassium Chlorate—</b><br>Copenhagen, 1 t. £40<br>Carril, 1 10 c. 59<br>Hiogo, 2 10 98<br>Shanghai, 1 15 70<br>St. Petersburg, 5 196 | <b>Rouen, 6 12</b><br><b>Oporto, 10 19</b><br><b>Antwerp, 7 296</b><br><b>Rotterdam, 2 79</b><br><b>Genoa, 9 366</b><br><b>Naples, 1 58</b><br><b>Santos, 3 120</b><br><b>New York, 20 768</b><br><b>Hamburg, 10 20</b> | <b>Salt—</b><br>Ambrix, 7 t. 10 c.<br>Antwerp, 275<br>Arichat, 690<br>Banana, 50<br>Benin, 4<br>Boston, 478<br>B. Ayres, 58 3<br>Calcutta, 2,058 2<br>Camerouns, 5<br>Demerara, 27<br>Ghent, 150<br>Gibraltar, 2 19<br>Gd. Hassam, 25<br>Halifax, 400<br>Kingston, Jam, 26 15<br>Lagos, 200<br>Landana, 60<br>Mandiji, 25 10<br>Matadi, 20<br>Melbourne, 50<br>Montreal, 274<br>Muculla, 20<br>New York, 150<br>Noki, 20<br>Old Calabar, 71<br>Quebec, 1,462<br>Quillo, 100<br>Rio de Janeiro, 2 2 300 bgs.<br>Rouen, 12<br>St. Petersburg, 450<br>San Francisco, 44<br>Savanilla, 1 cs.<br>Sette Camma, 20<br>Shediac, 300<br>Stockholm, 98<br>Sydney, 10<br>Talcabano, 1 5<br>Trinidad, 49<br>Valparaiso, 303<br>Wiborg, 653 | <b>Saltpetre—</b><br>Pernambuco, 11 t. 8 c. 3 q. £277<br>Cartagena, N.G., 6 8<br>Para, 10 3 13<br>Honolulu, 4 7<br>M. Video, 4 5<br>Parahyba, 1 26 | <b>Sheep Dip—</b><br>Pt. Elizabeth, 2,000 dms. £250<br>M. Video, 3 t. 11 c. 150<br>B. Ayres, 5 1 q. 15<br>Halifax, 13 2 15<br>Cape Town, 700 dms. 10 | <b>Soap—</b><br>Accra, 2 cs.<br>Akassa, 80 bxs. 41<br>Alexandria, 1,350<br>Algoa Bay, 500<br>Amboina, 65 10<br>Amsterdam, 140<br>Antwerp, 19<br>Baltimore, 1,025<br>Barbadoes, 2,400<br>Belize, 100<br>Benin, 100<br>Bombay, 480 20 bdl.<br>Bonny, 500<br>Calcutta, 7 50<br>Callao, 15<br>C. C. Castle, 200<br>Cape Lahou, 20<br>Cape Town, 100 131<br>Christiania, 100 20 10<br>Colon, 500<br>Delagoa Bay, 530<br>Demerara, 4 315<br>Dominica, 40<br>Drewin, 60<br>Guayaquil, 200 50<br>Havre, 500<br>Karachi, 300<br>Kurrachee, 500<br>Lagos, 60<br>Lanzarote, 30<br>Las Palmas, 170<br>Macassar, 600<br>Madras, 5 brls.<br>Malta, 20<br>Menada, 1,000<br>New York, 29<br>Old Calabar, 1,420<br>Opobo, 2,100<br>Para, 450 2<br>Penang, 200<br>Pt. Elizabeth, 1,575 50 29 brl.<br>Pt. Natal, 200 | <b>Rotterdam, 41 7 pks.</b><br><b>Rouen, 9</b><br><b>St. John's, N fl., 25</b><br><b>San Juan, 50</b><br><b>Sierra Leone, 2</b><br><b>Singapore, 1,742</b><br><b>Sydney, 3,500</b><br><b>Trinidad, 2,600</b><br><b>Valparaiso, 118</b> | <b>Soda—</b><br>Santos, 6 cks.<br><b>Soda Alkali—</b><br>Barcelona, 85 brls.<br>Lisbon, 60<br>Odessa, 50<br>Sydney, 40 bls.<br><b>Soda Ash—</b><br>Amsterdam, 250 bgs. 20 cks.<br>Baltimore, 3,087<br>Beyrout, 10<br>Boston, 460 30 tcs. 37<br>Brisbane, 100<br>B. Ayres, 125 dms. 150 brls. 100<br>Christiania, 10<br>E. London, 17<br>Ghent, 400 bgs.<br>Gothenburg, 157 84<br>Hamburg, 25<br>Hiogo, 100<br>Leghorn, 12<br>Libau, 8<br>Leonidian, 39<br>Newport News, 2<br>Philadelphia, 400 330<br>Rio de Janeiro, 130<br>Rotterdam, 300<br>Samarang, 20<br>San Francisco, 213<br>Santos, 20<br>Smyrna, 300 50<br>Syra, 100<br>Valparaiso, 100<br>Varna, 50<br>Venice, 10<br>Yokohama, 100 | <b>Soda Crystals—</b><br>Antofagasta, 30 brls.<br>Bombay, 30 kgs<br>Charlottetown, 6 30<br>Halifax, 10<br>Montreal, 335 100 cks.<br>Philadelphia, 407<br>Pisagua, 25<br>Quebec, 200 50<br>St. John, N.B., 40<br>Seville, 50 bgs.<br>Sydney, N.S.W., 67<br><b>Soda Oxide—</b><br>New York, 24 cs.<br><b>Sodium—</b><br>Barcelona, 24 lbs. £4<br><b>Sodium Bicarbonate—</b><br>Bordeaux, 80 kgs.<br>Calcutta, 104 7 cks.<br>Cape Town, 40 20 bgs.<br>Charlottetown, 30<br>Christiania, 30<br>Delagoa, 50<br>E. London, 15 brls.<br>Genoa, 60 22<br>Halifax, 100 bgs.<br>Kurrachee, 925<br>Leghorn, 25<br>Libau, 100<br>Malta, 14<br>Melbourne, 23<br>Montreal, 115 30 5<br>Naples, 50<br>N. Orleans, 100<br>New York, 600<br>Odessa, 300<br>Paris, 185<br>Philadelphia, 100<br>Portland, Me., 25<br>Pt. Natal, 5 bxs. 40 10<br>Pt. Said, 4<br>Rangoon, 50<br>Rotterdam, 60<br>Sydney, N.S.W., 40<br>Tarragona, 35<br>Trinidad, 50 | <b>Sodium Bichromate—</b><br>Dunedin, N.Z., 5 c. £6<br><b>Sodium Carbonate—</b><br>Boston, 50 brls.<br>New York, 112<br><b>Sodium Chlorate—</b><br>Rotterdam, 5 kgs.<br>Rouen, 4<br><b>Sodium Hyposulphite—</b><br>Pacasmayo, 30 kgs. | <b>Sodium Silicate—</b><br>Bordeaux, 2 brls.<br>Corunna, 17<br><b>Sodium Sulphate—</b><br>Boston, 100 bgs.<br><b>Starch—</b><br>Callao, 6 cs.<br>Las Palmas, 2 bxs.<br><b>Strontia—</b><br>Rotterdam, 1<br><b>Sulphur—</b><br>Honolulu, 12 c.<br>Bahia, 19<br>Boston, 250 t. 4<br>Montreal, 100 1<br>Calcutta, 10 1<br><b>Superphosphates—</b><br>Nantes, 49 t. 4 c.<br>Las Palmas, 50<br><b>Tin Oxide—</b><br>Montreal, 5 c.<br><b>Varnish—</b><br>Barcelona, 5 brls.<br>Bombay, 13 cs.<br>Boston, 15 cks. 3<br>Halifax, 1<br>Leghorn, 4<br>Montreal, 6 28<br>Piraeus, 1<br>Pt. Said, 1<br>Rio de Janeiro, 2<br>Santander, 1<br>Seville, 2<br>Valparaiso, 12<br><b>Verdigris—</b><br>Hiogo, 12 c.<br><b>White Lead—</b><br>New York, 2 cks.<br><b>Zinc Chloride—</b><br>Boston, 14 c.<br>Bombay, 2 t. 4 | <b>MANCHESTER</b><br><i>Week ending May 1</i><br><b>Alum—</b><br>Alexandria, 100 brl<br>Mersyne, 4<br><b>Aluminium—</b><br>Calais, 13 cs<br><b>Aniline Colours—</b><br>Hamburg |
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|                  |          |
|------------------|----------|
| <b>Chlorate—</b> |          |
| n, 6 kgs.        |          |
| 3 dms.           |          |
| 30               |          |
| 50 cks.          | 30 brls. |
| 48 cks.          |          |
| 97               |          |

**HULL.***Week ending May 2nd*

|              |  |
|--------------|--|
| 2 cks.       |  |
| 2 cs. 1 brl. |  |
| 82           |  |
| 2            |  |

**Im Sulphate—**

|          |  |
|----------|--|
| 500 bgs. |  |
| 444      |  |

**g Powder—**

|         |  |
|---------|--|
| 48 cks. |  |
| 50 cks. |  |
| 20      |  |
| 20      |  |

**Soda—**

|               |  |
|---------------|--|
| 70 dms.       |  |
| 205           |  |
| 11 cks. 5 cs. |  |

**(otherwise undescribed)**

|           |         |
|-----------|---------|
| 20 cks.   | 20 pks. |
| 4         | 8 cs. 1 |
| 701 slbs. | 14      |
| 2 cks. 1  |         |
| 9         | 25      |
| 8         | 5       |
| 145       | 15      |
| 25        |         |
| 100       |         |
| 17        |         |
| 26 drs.   |         |

**Oil—**

|        |  |
|--------|--|
| 889 c. |  |
| 1,742  |  |
| 202    |  |
| 100    |  |
| 2,143  |  |
| 170    |  |
| 1,417  |  |
| 243    |  |

**(otherwise undescribed)**

|             |   |
|-------------|---|
| 500 cks.    |   |
| 7 cks.      |   |
| 42 bgs.     |   |
| 3 cs. 1 kg. |   |
| 2           |   |
| 2           |   |
| 1           | 9 |

**Mil—**

|        |  |
|--------|--|
| 119 c. |  |
| 86     |  |
| 57     |  |
| 921    |  |
| 28     |  |
| 135    |  |
| 173    |  |
| 56     |  |

**Colours—**

|                       |    |
|-----------------------|----|
| 15 cks. 6 dms. 3 pks. |    |
| 45                    | 56 |
| 54                    | 50 |
| 34                    | 44 |
| 32                    | 60 |
| 116                   | 3  |
| 12                    | 1  |
| 12                    | 2  |
| 4                     |    |
| 17                    | 4  |
| 1                     | 50 |
| 3                     | 7  |
| 24                    |    |
| 28                    |    |
| 118                   |    |
| 630                   |    |

|                         |        |
|-------------------------|--------|
| Rotterdam, 4            |        |
| Stettin, 10             |        |
| <b>Paraffin Wax—</b>    |        |
| Reval, 150 bgs.         |        |
| <b>Pitch—</b>           |        |
| Antwerp, 300 t.         |        |
| Dunkirk, 200            |        |
| Abo, 20 cks.            |        |
| <b>Salt—</b>            |        |
| Calcutta, 699 t.        |        |
| Stavanger, 1 cs.        |        |
| <b>Starch—</b>          |        |
| Bergen, 22 sks.         |        |
| Copenhagen, 200 cs.     |        |
| <b>Tallow—</b>          |        |
| Stockholm, 15 cks.      |        |
| <b>Tar—</b>             |        |
| Abo, 176 cks.           |        |
| Antwerp, 4              |        |
| Bremen, 3               |        |
| Bergen, 3               |        |
| Dunkirk, 15             |        |
| Gothenburg, 5           |        |
| Hamburg, 3              |        |
| Rotterdam, 3            |        |
| <b>Yarnish—</b>         |        |
| Amsterdam, 6 cks. 1 cs. |        |
| Antwerp, 2              |        |
| Gothenburg, 1           | 2 dms. |
| Hamburg, 6              |        |
| Rotterdam, 4            |        |
| Stettin, 5              |        |

**GLASGOW.***Week ending May 7th.*

|                                              |  |
|----------------------------------------------|--|
| <b>Albumen—</b>                              |  |
| U.S.A., £163                                 |  |
| <b>Ammonium Sulphate—</b>                    |  |
| Genoa, 8 t. 3 c.                             |  |
| <b>Aniline—</b>                              |  |
| Calcutta, £53                                |  |
| <b>Castor Oil—</b>                           |  |
| Ad-laid, £27                                 |  |
| <b>Caustic Soda—</b>                         |  |
| B. Ayres, 19 t. 1½ c.                        |  |
| <b>Chemicals (otherwise undescribed)</b>     |  |
| Florisdorf, £1                               |  |
| <b>Coal Products—</b>                        |  |
| Aniline Colours                              |  |
| U.S.A., £68                                  |  |
| <b>Cresote</b>                               |  |
| France, £950                                 |  |
| <b>Tar</b>                                   |  |
| Riga, 11 t.                                  |  |
| <b>Tar Oil</b>                               |  |
| Hamburg, 16 t. 16 c.                         |  |
| <b>Coal Products (otherwise undescribed)</b> |  |
| Christiania, £163                            |  |
| Riga, 80                                     |  |
| Drontheim, 33                                |  |
| Kjerpen, £120. 15s.                          |  |
| Rotterdam, 19 t. 3 c.                        |  |
| <b>Dyestuffs (otherwise undescribed)</b>     |  |
| Rotterdam, £297                              |  |
| <b>Extracts—</b>                             |  |
| Canada, £284                                 |  |
| Montreal, 59                                 |  |
| Toronto, 64                                  |  |
| U.S.A., 52                                   |  |
| Lisbon, 44                                   |  |
| <b>Fustic Extract—</b>                       |  |
| Canada, £129                                 |  |
| Calcutta, 61                                 |  |
| <b>Glucose—</b>                              |  |
| Ottawa, 1 t. 2 c                             |  |
| <b>Iodine—</b>                               |  |
| Rotterdam, 5 c.                              |  |
| <b>Lead Nitrate—</b>                         |  |
| Canada, £91                                  |  |
| Genoa, 48                                    |  |
| <b>Linseed Oil—</b>                          |  |
| B. Ayres, 4 t. 3 c.                          |  |
| <b>Litharge—</b>                             |  |
| Canada, £62                                  |  |
| <b>Logwood—</b>                              |  |
| Canada, £60                                  |  |
| Montreal, 34                                 |  |
| Lisbon, 53                                   |  |
| <b>Manure—</b>                               |  |
| Hamburg, 12 c.                               |  |
| <b>Nitre—</b>                                |  |
| U.S.A., £83                                  |  |
| <b>Paint—</b>                                |  |
| B. Ayres, £86                                |  |
| Jamaica, 64                                  |  |
| Shanghai, 58                                 |  |
| Singapore, 202                               |  |

**Painters' Colours—**

|                |  |
|----------------|--|
| Calcutta, £232 |  |
| Rotterdam, 50  |  |

**Paraffin Wax—**

|              |  |
|--------------|--|
| Bari, £80    |  |
| Venice, 246  |  |
| Genoa, 877   |  |
| Naples, 393  |  |
| Leghorn, 397 |  |
| Riga, 15     |  |

**Pitch—**

|              |  |
|--------------|--|
| Naples, £315 |  |
| Venice, 657  |  |
| Genoa, 1,535 |  |

**Potassium Bichromate—**

|                |  |
|----------------|--|
| Canada, £167   |  |
| Calcutta, 34   |  |
| Genoa, 692     |  |
| Naples, 96     |  |
| Venice, 153    |  |
| Hiogo, 200     |  |
| Rotterdam, 100 |  |

**Salt—**

|                      |  |
|----------------------|--|
| B. Ayres, 7 t. 14 c. |  |
|----------------------|--|

**Sheep Dip—**

|                   |  |
|-------------------|--|
| Punta Arenas, £24 |  |
| B. Ayres, 322     |  |

**Sodium Bichromate—**

|                     |  |
|---------------------|--|
| Canada, 1 t. 17½ c. |  |
| Genoa, 22 5½        |  |

**Sodium Sulphate—**

|             |  |
|-------------|--|
| Lisbon, £22 |  |
|-------------|--|

**Starch—**

|             |  |
|-------------|--|
| Lisbon, £70 |  |
|-------------|--|

**Tallow—**

|                    |  |
|--------------------|--|
| Lisbon, 5 t. 14 c. |  |
| Rotterdam, 8 18    |  |

**Tin Crystals—**

|             |  |
|-------------|--|
| Lisbon, £30 |  |
|-------------|--|

**Treacle—**

|                          |  |
|--------------------------|--|
| Christiania, 17 t. 9½ c. |  |
| Drontheim, 2 11½         |  |
| Rotterdam, 20 2          |  |

**Varnish—**

|                 |  |
|-----------------|--|
| Christiania, £7 |  |
|-----------------|--|

**White Lead—**

|                |  |
|----------------|--|
| Montreal, £301 |  |
|----------------|--|

**TYNE.***Week ending May 2nd.*

|                           |  |
|---------------------------|--|
| <b>Alkali—</b>            |  |
| Rotterdam, 13 t. 7 c.     |  |
| <b>Alum—</b>              |  |
| Samarang, 11 t. 15 c.     |  |
| <b>Antimony—</b>          |  |
| Bergen, 6 c.              |  |
| Montreal, 2 t.            |  |
| Stockholm, 3              |  |
| <b>Barium—</b>            |  |
| Rouen, 5 t. 2 c.          |  |
| <b>Barium Carbonate—</b>  |  |
| Rouen, 25 t.              |  |
| Hamburg, 151              |  |
| Antwerp, 21 7 c.          |  |
| <b>Barium Chloride—</b>   |  |
| Rouen, 5 t. 2 c.          |  |
| <b>Bleaching Powder—</b>  |  |
| San Francisco, 9 t. 16 c. |  |
| Lisbon, 25 5              |  |
| Copenhagen, 15 14         |  |
| Aarhus, 10 1              |  |
| Rotterdam, 15 16          |  |
| Antwerp, 11 3             |  |
| Christiania, 1 4          |  |
| Odense, 15 4              |  |
| <b>Carbolic Acid—</b>     |  |
| Rotterdam, 5 t. 11 c.     |  |
| <b>Caustic Soda—</b>      |  |
| Stockholm, 13 t. 12 c.    |  |
| Copenhagen, 2 18          |  |
| Genoa, 10 3               |  |
| Lisbon, 89 15             |  |
| Aarhus, 1 4               |  |
| Hamburg, 12 15            |  |
| Antwerp, 2 18             |  |
| Java, 15 15               |  |
| <b>Lamp Black—</b>        |  |
| Toronto, 18 c.            |  |
| <b>Linseed Oil—</b>       |  |
| Montreal, 2 t. 4 c.       |  |
| <b>Litharge—</b>          |  |
| Stockholm, 8 t.           |  |
| Montreal, 30 2 c.         |  |
| Rouen, 4 19               |  |
| Rotterdam, 4 5            |  |
| Hamburg, 1 1              |  |

**Magnesia—**

|                   |  |
|-------------------|--|
| Genoa, 12 pks.    |  |
| Lisbon, 1 t.      |  |
| Montreal, 1 12 c. |  |
| Rotterdam, 2      |  |

**Paint—**

|                       |  |
|-----------------------|--|
| Copenhagen, 5 t. 4 c. |  |
| Hamburg, 5 t. 4       |  |
| Antwerp, 6 1          |  |

**Soda—**

|                       |  |
|-----------------------|--|
| Stockholm, 55 t. 9 c. |  |
| Geele, 75 3           |  |
| Genoa, 10 3           |  |
| San Francisco, 2 18   |  |
| Montreal, 50 2        |  |
| Leghorn, 10           |  |
| Rotterdam, 10         |  |
| Hamburg, 1 3          |  |
| Christiania, 12 14    |  |
| Samarang, 8 18        |  |

**Soda Ash—**

|                       |  |
|-----------------------|--|
| Stockholm, 75 t. 9 c. |  |
| Lisbon, 9 19          |  |

**Sodium Hyposulphate—**

|                      |  |
|----------------------|--|
| San Francisco, 15 t. |  |
|----------------------|--|

**Sodium Hyposulphite—**

|                            |  |
|----------------------------|--|
| San Francisco, 18 t. 19 c. |  |
| Genoa, 7 2                 |  |
| Montreal, 15 2             |  |
| Stockholm, 11              |  |

**Sodium Silicate—**

|                    |  |
|--------------------|--|
| Lisbon, 1 t. 10 c. |  |
|--------------------|--|

**Sodium Sulphate—**

|                  |  |
|------------------|--|
| Skutskar, 360 t. |  |
|------------------|--|

**Sulphur—**

|                 |  |
|-----------------|--|
| Geele, 50 t.    |  |
| Rotterdam, 50   |  |
| Hamburg, 100    |  |
| Antwerp, 6 1 c. |  |
| Christiania, 25 |  |

**Varnish—**

|              |  |
|--------------|--|
| Bergen, 1 c. |  |
|--------------|--|

**White Lead—**

|                     |  |
|---------------------|--|
| Stockholm, 12 t.    |  |
| Copenhagen, 4 12 c. |  |
| Lisbon, 4           |  |
| Montreal, 1 11      |  |
| Hamburg, 1 4        |  |

**GOOLE.***Week ending April 29th.*

|                                              |  |
|----------------------------------------------|--|
| <b>Chemicals (otherwise undescribed)</b>     |  |
| Hamburg, 21 cks.                             |  |
| <b>Coal Products (otherwise undescribed)</b> |  |
| Antwerp, 6 cks.                              |  |
| Boulogne, 1 6 cs.                            |  |
| <b>Colours—</b>                              |  |
| Amsterdam, 8 cks.                            |  |
| Ghent, 3 4 cs.                               |  |
| Harlingen, 5                                 |  |
| Rotterdam, 3                                 |  |
| <b>Dyestuffs (otherwise undescribed)</b>     |  |
| Ghent, 1 ck. 8 pks.                          |  |
| Hamburg, 59 cks.                             |  |
| Rotterdam, 1                                 |  |
| <b>Manure—</b>                               |  |
| Hamburg, 738 bgs.                            |  |
| <b>Pitch—</b>                                |  |
| Antwerp, 713 t.                              |  |
| Dunkirk, 374                                 |  |
| <b>Soap—</b>                                 |  |
| Ghent, 8 cks.                                |  |
| <b>GRIMSBY.</b>                              |  |
| <i>Week ending May 2nd.</i>                  |  |
| <b>Alkali—</b>                               |  |
| Hamburg, 10 cs.                              |  |
| <b>Chemicals (otherwise undescribed)</b>     |  |
| Hamburg, 36 dms.                             |  |
| <b>Coal Products (otherwise undescribed)</b> |  |
| Dieppe, 85 cks.                              |  |
| Hamburg, 4 6 btls.                           |  |
| Rotterdam, 1                                 |  |
| <b>Colours—</b>                              |  |
| Antwerp, 6 cks. 1 cs.                        |  |
| Dieppe, 1                                    |  |
| Hamburg, 6                                   |  |
| St. Thomas, 2                                |  |
| <b>Pitch—</b>                                |  |
| Antwerp, 67 t.                               |  |



## PRICES CURRENT.

WEDNESDAY, MAY 13TH, 1896.

PREPARED BY MESSRS. HIGGINBOTTOM AND CO., 116, PORTLAND STREET, MANCHESTER.

The values stated are F.O.R. at maker's works, or at usual ports of shipment in U.K. The price in different localities may vary.

## Acids:—

|                                         | £            | s.   | d.      |
|-----------------------------------------|--------------|------|---------|
| Acetic, 25 % and 40 % .. .. .           | per cwt.     | 6/   | 9/-     |
| " Glacial .. .. .                       | "            | 40/- |         |
| Arsenic S.G., 2000° .. .. .             | "            | 1    | 2 0     |
| Fluoric .. .. .                         | per lb.      | 0    | 0 3½    |
| Muriatic (Tower Salts), 30° Tw. .. .. . | per bottle   | 0    | 0 10    |
| " (Cylinder), 30° Tw. .. .. .           | "            | 0    | 3 0     |
| Nitric 80° Tw. .. .. .                  | per lb.      | 0    | 0 1½    |
| Nitrous .. .. .                         | "            | 0    | 0 1¼    |
| Oxalic .. .. .                          | nett         | 0    | 0 3½    |
| Phosphoric, 1750° .. .. .               | "            | 0    | 1 0     |
| Picric .. .. .                          | "            | 0    | 0 11    |
| Sulphuric (fuming 50 %/.) .. .. .       | per ton      | 15   | 10 0    |
| " (monohydrate) .. .. .                 | "            | 5    | 10 0    |
| " (Pyrites, 168°) .. .. .               | "            | 3    | 0 0     |
| " 150° .. .. .                          | "            | 1    | 5 0     |
| " (free from arsenic, 145°) .. .. .     | "            | 1    | 7 6     |
| Sulphurous (solution) S.G. 1025 .. .. . | "            | 3    | 0 0     |
| Tannic (pure) .. .. .                   | per lb.      | 0    | 1 2½    |
| Tartaric .. .. .                        | "            | 0    | 1 3     |
| Arsenic, white powdered .. .. .         | nett per ton | 23   | 0 0     |
| Alum (loose lump) .. .. .               | "            | 4    | 10 0    |
| Alumina Sulphate (pure) .. .. .         | "            | 4    | 12 6    |
| Aluminoferic .. .. .                    | "            | 2    | 5 0     |
| Aluminium .. .. .                       | per lb.      | 0    | 2 10    |
| Ammonia, Anhydrous .. .. .              | "            | 0    | 1 4     |
| " 880=28° B. .. .. .                    | per lb.      | 0    | 0 2¼    |
| " =24° B. .. .. .                       | "            | 0    | 0 1¼    |
| " Carbonate .. .. .                     | nett         | 0    | 0 3     |
| " Muriate .. .. .                       | per ton      | 22   | 0 0     |
| " (sal-ammoniac) 1st & 2nd .. .. .      | per cwt.     | 39/- | 37/-    |
| " Nitrate .. .. .                       | per ton      | 37   | 10 0    |
| " Phosphate .. .. .                     | per lb.      | 0    | 0 6½    |
| " Sulphate (grey) London .. .. .        | per ton      | 8    | 2 6     |
| " (grey) Hull .. .. .                   | "            | 8    | 0 0     |
| Aniline Oil (pure) .. .. .              | per lb.      | 0    | 0 7¼    |
| Aniline Salt .. .. .                    | "            | 0    | 0 6¾    |
| Antimony .. .. .                        | per ton      | 30   | 0 0     |
| " (tartar emetic) .. .. .               | per lb.      | 0    | 0 9½    |
| " (golden sulphide) .. .. .             | "            | 0    | 0 10    |
| Barium Chloride .. .. .                 | per ton      | 7    | 0 0     |
| " Carbonate (native) .. .. .            | "            | 3    | 10 0    |
| " Sulphate (native levigated) .. .. .   | "            | 42/6 | to 65/- |
| Bleaching Powder, 35 % .. .. .          | nett         | 6    | 17 6    |
| " Liquor, 7 % .. .. .                   | "            | 3    | 10 0    |
| Bisulphide of Carbon .. .. .            | "            | 12   | 10 0    |
| Chromium Acetate (crystal) .. .. .      | per lb.      | 0    | 0 6     |
| Calcium Chloride .. .. .                | per ton      | 2    | 2 6     |
| China Clay (at Runcorn) in bulk .. .. . | "            | 15/- | to 30/- |

## Coal Tar Products and Dyes:—

|                                            |                   |    |       |
|--------------------------------------------|-------------------|----|-------|
| Alizarine (artificial) 20 % .. .. .        | nett per lb.      | 0  | 0 7   |
| Magenta .. .. .                            | "                 | 0  | 3 9   |
| Anthracene, 30 % A, f.o.b. London .. .. .  | per unit per cwt. | 0  | 0 11½ |
| Benzol, 90 % .. .. .                       | per gallon        | 0  | 2 0   |
| " 50/90 .. .. .                            | "                 | 0  | 1 8   |
| Carbolic Acid (crystallised 40°) .. .. .   | per lb.           | 0  | 0 7   |
| " (crude 60°) .. .. .                      | per gallon        | 0  | 2 1   |
| Creosote (ordinary) .. .. .                | "                 | 0  | 0 1   |
| " (filtered for Lucigen light) .. .. .     | "                 | 0  | 0 1¼  |
| Crude Naphtha 30 % @ 120° C. .. .. .       | "                 | 0  | 0 8   |
| Grease Oils, 22° Tw. .. .. .               | per ton           | 2  | 10 0  |
| Pitch, f.o.b. Liverpool or Garston .. .. . | "                 | 1  | 12 6  |
| Solvent Naphtha, 90 % at 160° .. .. .      | per gallon        | 0  | 1 3   |
| " Lucigen" and "Wells" Oils .. .. .        | "                 | 0  | 0 2   |
| Copper .. .. .                             | per ton           | 46 | 2 6   |
| " Sulphate .. .. .                         | "                 | 19 | 0 0   |
| " Oxide (copper scales) .. .. .            | "                 | 41 | 10 0  |
| Glycerine (crude) .. .. .                  | "                 | 36 | 0 0   |
| " (distilled S.G. 1250°) .. .. .           | "                 | 75 | 0 0   |
| Iodine .. .. .                             | nett, per oz.     | 0  | 0 9   |
| Iron Sulphate (copperas) .. .. .           | per ton           | 1  | 7 6   |
| " Sulphide (antimony slag) .. .. .         | "                 | 2  | 0 0   |
| Lead (sheet) for cash .. .. .              | "                 | 12 | 10 0  |
| " Litharge Flake (ex ship) .. .. .         | "                 | 14 | 10 0  |
| " Acetate (white " ) .. .. .               | "                 | 21 | 10 0  |
| " brown " ) .. .. .                        | "                 | 15 | 0 0   |
| " Carbonate (white lead) pure .. .. .      | "                 | 16 | 0 0   |
| " Nitrate .. .. .                          | "                 | 19 | 0 0   |

|                                       |            |    |     |
|---------------------------------------|------------|----|-----|
| Lime, Acetate (brown) (ex shi .. .. . | per ton    | 4  | 5 0 |
| " (grey) (ex ship) .. .. .            | "          | 7  | 7   |
| Magnesium (ribbon and wire) .. .. .   | per oz.    | 0  | 2   |
| " Chloride (ex ship) .. .. .          | per ton    | 2  | 7   |
| " Carbonate .. .. .                   | per cwt.   | 1  | 17  |
| " Calcined Magnesia .. .. .           | per ton    | 9  | 15  |
| " Sulphate (Epsom Salts) .. .. .      | per ton    | 2  | 15  |
| Manganese, Sulphate .. .. .           | "          | 16 | 10  |
| " Borate .. .. .                      | per cwt.   | 2  | 15  |
| " Ore, 70 % .. .. .                   | per ton    | 3  | 15  |
| Methylated Spirit, 61° O.P. .. .. .   | per gallon | 0  | 1 8 |
| Naphtha (Wood), Solvent .. .. .       | "          | 0  | 3 0 |
| " Miscible, 60° O.P. .. .. .          | "          | 0  | 3 3 |

|                                                    |              |    |      |
|----------------------------------------------------|--------------|----|------|
| Oils:—                                             |              |    |      |
| Cotton-seed .. .. .                                | per ton      | 17 | 0 0  |
| Linseed .. .. .                                    | "            | 20 | 0 0  |
| Petroleum, American .. .. .                        | per gallon   | 0  | 0 6½ |
| Stearine .. .. .                                   | per ton      | 21 | 15 0 |
| Phosphorus (yellow) .. .. .                        | per lb.      | 0  | 2 2  |
| " (red) .. .. .                                    | "            | 0  | 2 8  |
| Potassium (metal) .. .. .                          | per oz.      | 0  | 3 7  |
| " Bichromate .. .. .                               | nett per lb. | 0  | 0 4½ |
| " Carbonate, 90% (ex ship) .. .. .                 | per ton      | 16 | 15 0 |
| " Chlorate .. .. .                                 | per lb.      | 0  | 0 4½ |
| " Cyanide, 98% .. .. .                             | "            | 0  | 1 2  |
| " Hydrate (Caustic Potash) 90% .. .. .             | per ton      | 24 | 10 0 |
| " (Caustic Potash) 75/80% .. .. .                  | "            | 20 | 10 0 |
| " (Caustic Potash) 70/75% .. .. .                  | "            | 19 | 10 0 |
| " Nitrate (refined) .. .. .                        | per cwt.     | 1  | 1 6  |
| " Permanganate .. .. .                             | per cwt.     | 3  | 7 6  |
| " Prussiate Yellow .. .. .                         | per lb.      | 0  | 0 7½ |
| " Sulphate, 90 % (ex ship) .. .. .                 | per ton      | 9  | 15 0 |
| " Muriate, 80 % (do.) .. .. .                      | "            | 8  | 10 0 |
| Silver (metal) .. .. .                             | per oz.      | 0  | 2 7½ |
| " Nitrate .. .. .                                  | "            | 0  | 2 0  |
| Sodium (metal) .. .. .                             | per lb.      | 0  | 2 1½ |
| " Carb. (refined Soda-ash) 48 % .. .. .            | nett per ton | 4  | 15 0 |
| " (Caustic Soda-ash) 48 % .. .. .                  | "            | 4  | 5 0  |
| " (Carb. Soda-ash) 48% .. .. .                     | "            | 4  | 0 0  |
| " (Alkali) 58 % .. .. .                            | "            | 3  | 15 0 |
| " (Soda Crystals) .. .. .                          | "            | 2  | 0 0  |
| " Acetate (ex-ship) .. .. .                        | "            | 14 | 7 6  |
| " Arseniate, 45 % .. .. .                          | "            | 15 | 0 0  |
| " Chlorate .. .. .                                 | per lb.      | 0  | 0 6  |
| " Borate (Borax) .. .. .                           | net, per ton | 20 | 0 0  |
| " Bichromate .. .. .                               | per lb.      | 0  | 0 3¼ |
| " Hydrate (77 % Caustic Soda) (f.o.b.) net pr. ton | "            | 9  | 7 0  |
| " (74 % Caustic Soda) .. .. .                      | "            | 8  | 7 6  |
| " (70 % Caustic Soda) .. .. .                      | "            | 7  | 7 6  |
| " (60 % Caustic Soda) .. .. .                      | "            | 6  | 7 6  |
| " (60 % Caustic Soda, cream) (f.o.b.) .. .. .      | "            | 6  | 7 0  |
| " Bicarbonate .. .. .                              | "            | 6  | 10 0 |
| " Hyposulphite .. .. .                             | "            | 5  | 10 0 |
| " Manganate, 25% .. .. .                           | "            | 15 | 0 0  |
| " Nitrate (95 %) ex-ship Liverpool .. .. .         | per cwt.     | 0  | 8 0  |
| " Nitrite, 98 % .. .. .                            | per ton      | 30 | 0 0  |
| " Phosphate .. .. .                                | "            | 12 | 15 0 |
| " Silicate (glass) .. .. .                         | per ton      | 4  | 10 0 |
| " (liquid, 100° Tw.) .. .. .                       | "            | 3  | 10 0 |
| " Stannate, 40 % .. .. .                           | per cwt.     | 3  | 2 4  |
| " Sulphate (Salt-cake) .. .. .                     | per ton      | 1  | 3 6  |
| " (Glauber's Salts) .. .. .                        | "            | 1  | 10 0 |
| " Sulphide .. .. .                                 | "            | 7  | 0 0  |
| " Sulphite .. .. .                                 | "            | 5  | 15 0 |
| Strontium Hydrate, 100% .. .. .                    | "            | 8  | 0 0  |
| Sulphocyanide Ammonium, 95 % .. .. .               | per lb.      | 0  | 0 6½ |
| " Barium, 95 % .. .. .                             | "            | 0  | 0 4½ |
| " Potassium .. .. .                                | "            | 0  | 0 7  |
| Sulphur (Flowers) .. .. .                          | per ton      | 6  | 5 0  |
| " (Roll Brimstone) .. .. .                         | "            | 5  | 10 0 |
| " Brimstone: Best Quality .. .. .                  | "            | 3  | 12 6 |
| Superphosphate of Lime (26% .. .. .                | "            | 2  | 17 0 |
| Tallow .. .. .                                     | "            | 20 | 0 0  |
| Tin Crystals .. .. .                               | per lb.      | 0  | 0 5  |
| " English Ingots .. .. .                           | per ton      | 63 | 10 0 |
| Zinc (Spelter) .. .. .                             | "            | 16 | 17 6 |
| " Chloride (solution, 100° Tw.) .. .. .            | "            | 5  | 2 6  |



# THE CHEMICAL TRADE JOURNAL AND OIL, PAINT and COLOUR REVIEW.

Publishing Offices: 32, BLACKFRIARS STREET, MANCHESTER.

170.

SATURDAY, MAY 23, 1896.

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## TENDER.

MARKET HARBOROUGH GAS COMPANY, LIMITED.

Directors of the above Company invite Tenders for the supply of 3,000 tons of fresh wrought screened GAS COALS, to be delivered during the ensuing Twelve Months.

Tenders for the supply of about 30 tons of SULPHURIC ACID.

Tenders to the Chairman by the 28th inst.

Particulars from the Manager,

J. FEVER.

## TENDER.

T A R.

Directors of the Reading Gas Company invite Tenders for the Purchase of their Surplus Tar for One Year, commencing on the 1st of June next.

Tenders for the contract will be forwarded on application.

Communication direct to the Works.

Endorsed "Tender for Tar," must be delivered not later than Monday, the 27th inst.

Place, Reading,  
May, 1896.

ARTHUR H. CANE,  
Secretary.

## ADVERTISEMENT.

OL and Chemical Manufacturing Works.—

Sold by Auction by Mr. G. H. Taylor, of Coddison, Taylor, & Booth, on the 2nd of June, all those Works in the occupation of Dan. Dawson Bros., and particulars in future advertisement. Full information can be obtained from Mr. J. F. DYSON, Huddersfield; from Mr. J. F. DYSON, New-  
field, or from Messrs. RAMSDEN, SYKES, & RAMSDEN, Solicitors,

## Notices.

Communications for the *Chemical Trade Journal* should be sent by Post Office Orders made payable to—

8 BROS., 32, Blackfriars Street, MANCHESTER.

Our Registered Telegraphic Address is—

"Expert, Manchester."

NATIONAL TELEPHONE 3060.

## Advertisements.

Advertisements of Situations Vacant, Premises on Sale or To be Let, and Specific Articles for Sale by Private Contract are published in the *Chemical Trade Journal* at the following rates:—

10 Words and under .....

Each additional 10 words .....

Advertisements of Situations Wanted are inserted at one-half the rate when prepaid, viz:—

10 Words and under .....

Each additional 10 words .....

## CURRENT TOPICS.

### OXYGEN AS A RESTORATIVE.

THE use of oxygen as a restorative in cases of "gassing" and drowning is a matter of growing interest. In France its efficacy is apparently accepted as settled, and it is provided in some cases by the municipal authorities. In this country, however, there seems to be some doubt as to its reliability. So far, most of the complaints of those who do not think much of it have been mostly negative ones, but it may be reasonably presumed that the result obtained in connection with the recent colliery accident near Leeds will be used as evidence by those who belittle the value of oxygen. It is true that while there is one failure recorded, there are three or four successes; but it is necessary after the Leeds case to emphasise the importance of using the oxygen rightly.

Taking one thing with another, we cannot come to the conclusion that the indefinite results obtained with the man Whittaker, at Leeds, can be fairly taken as indicative of the unreliability of oxygen. In the first place, the case was a most desperate one and altogether incomparable with the circumstances under which efficacy is usually claimed for oxygen. The man was, so to speak, saturated with carbon dioxide and in an utter state of collapse. Though we have been to considerable trouble in the matter, we have not been successful in gathering very satisfactory evidence as to the way the oxygen was applied, and though we do not for a moment wish to impute anything derogatory to the two medical men who were present at the time, we feel justified in suggesting that better results might have been obtained had the oxygen been administered by a works manager, or some one familiar with the treatment of "gassing."

The result in this instance has emphasised the necessity of steps being taken to extend the knowledge of the correct use of oxygen, at all events in chemical and allied works. The question has been receiving attention in several districts where the employers are anxious to obviate the danger of gassing as far as possible. Concurrently we have for a considerable period been collecting all the information extant, with a view to codifying the same, and thus, as far as is feasible, making it possible to compare the results of future cases. In thus prematurely disclosing our intentions we afford an opportunity to all those with whom we have not been in communication of contributing towards the formulation of a consistent, practical, and trustworthy *modus operandi*.

### NITRATE FINANCE.

Though the nitrate world is the poorer for the loss of the familiar figure so long connected with the nitrate industry, things are by no means paralysed. The Anglo-Chilian Nitrate and Railway Company, Ltd., are busy with an endeavour to recoup themselves somewhat for the heavy expenses they have been put to during the development of



the company, and have this week offered an issue of £600,000. Four-and-a-Half per Cent. Consolidated Mortgage Bonds. In connection with this issue it is interesting as well as advisable to survey the past history of the company.

The original prospectus of the company contemplated the issue of £200,000. First Mortgage Bonds secured on the railway, pier, and water supply. These were fully subscribed, and were issued in due course.

In 1890, £150,000. Six per Cent. (grounds and works) First Mortgage Debentures were issued. These were secured by a first mortgage upon the 10½ square miles of nitrate grounds the company then possessed, and its single officina then in course of construction, and a second charge upon the property comprised in the mortgage for securing the railway bonds.

Since that time the company has acquired about eight square miles of additional nitrate grounds, another officina has been built, and the railway extended some 15½ miles and its equipment more than doubled. These extensions and additions to the railway were necessary for the proper development of the growing traffic of other officinas established in the district, and with which the railway has been connected. The cost of these works and of the new grounds with the necessary plant has, besides depleting the company's funds on this side, also involved the company in heavy interest and banking charges in Chili. The company now desires to recoup itself some of the cost thus incurred and to consolidate, at a lower rate of interest under a single first mortgage, its various loans, including £80,000. of Seven per Cent. Debentures issued at a temporary measure in 1895.

The profits for the last four years have shown an increase, and though the continuation of this cannot be expected in the face of the past year and its low prices, still a fair profit may honestly be looked for. Seeing that the present issue if fully taken up would require £33,000. to meet the interest, this is evidently well provided for, as the profit of 1892 would have been more than sufficient, compared with which the profits for 1893 and 1894 show that they doubled and then nearly trebled themselves. Taking the mean of the three years, therefore, to represent the probable profit for 1895, there is ample security for this new issue.

### SOCIETY OF CHEMICAL INDUSTRY.

THE following is the provisional programme for the annual general meeting, to be held in London, on Wednesday, Thursday, and Friday, July 15th, 16th, and 17th, 1896:—First day: 10 a.m., council meeting. 10-30 a.m., general meeting and president's address (in the Hall of the Carpenters' Company, London Wall). 2 p.m. visits to (a) Her Majesty's Mint, (b) the Tower Bridge. 9 p.m. Reception at the Mansion House by the Right Hon. the Lord Mayor. Second day: An excursion will be made on the River Thames from Reading to Windsor. A special train will leave Paddington Station, Great Western Railway, main line, at about 9-30 a.m. for Reading, whence launches, provided by Messrs. Salter Bros., of Oxford and Windsor, will convey the party to Medmenham, where luncheon will be served at the Abbey Hotel. After luncheon, progress will be made towards Windsor, near which tea will be provided. Tickets 12s. 6d. each person. From Windsor a special train will proceed to Paddington, arriving at about 8-30 p.m. Each member notifying his intention to attend, upon the form of completed arrangements which will be found in the May issue of the Journal, may apply for friends' or ladies' tickets in addition. Third day: By special permission members will visit (a) the Royal Arsenal, Woolwich, (b) the Siemens' Company's Telegraph Cable and Electric Construction Works at Silvertown. In the evening an informal dinner (tickets, including light wine, 10s. 6d.) will be held at the new Hotel Cecil. The only toasts will be those of the "Queen and Royal Family" and "The Society of Chemical Industry." These will be proposed during a smoking concert after dinner. The music will be

specially arranged for. Tickets, coupons, and information may be had, on and after June 1st, from the Secretary of the London Section, Mr. John Heron, c/o Society Chemical Industry, Palace Chambers, Westminster, S.W.

### NOTTINGHAM SECTION.

This section held their annual meeting on Wednesday, May 13th, at Nottingham, Mr. F. J. R. Carulla being in the chair. Mr. John White, F.I.C., of Derby, was amongst the visitors. The ballot resulted in the re-election of the present officers for the next session (1896-97)—chairman, Mr. F. J. R. Carulla; vice-chairman, Mr. J. M. C. Paton; treasurer, Mr. S. J. Pentecost; secretary, Mr. J. T. Wood; and of the following committee: Messrs L. Archbutt, R. M. Caven, Dr. F. Clowes, Messrs. H. Forth, W. G. Johnston, J. F. Kempson, F. E. Lott, T. Mason, Dr. J. J. Sudborough, and Messrs. C. Taylor, and G. J. Ward.—The Chairman read (in the unavoidable absence of the secretary) the annual report prepared on behalf of the committee, showing that the section is in an active condition, 18½ pages of the Journal of the society having been filled by its contributions during the last 12 months. "The total pages devoted to sectional matter in these numbers is 236, which divided by eight gives an average of 29½ for each section. Considering the smallness of our number, it is a matter for congratulation that we are close on two-thirds of the average."—Commenting on the report, Mr. Archbutt thought that the comparison made was hardly just enough to the section, which consisted of little more than 50 members, whilst the society as a whole had nearly 3,000.—The treasurer's annual report showed the section to be in a satisfactory condition financially.—On the motion of Mr. J. F. Kempson, seconded by Mr. G. J. Ward, the hearty thanks of the section were accorded to the College Committee for the use of rooms in University College, a privilege that is very highly valued and appreciated.—Mr. L. Archbutt then read an important paper on "An evaporation test for cylinder oils," describing an apparatus which he had devised for the rapid estimation of the constituents of oils that are volatile at the temperatures to which they are exposed in use. The author finds that this result varies from less than 0.5 per cent. to 18 per cent., and is thus able to obtain quickly a quantitative as well as qualitative estimate of the practical value of the oil with less trouble than by the usual test of the flashing point.—The paper was discussed by Dr. Clowes, Messrs. Caven, Paton, Ward, and others.—A discussion then followed on the chairman's recent note on "The corrosion of iron by crude tar," Dr. Clowes expressing doubts as to the corrosive action being due to the presence of carbolic acid in the tar.—Mr. Ward mentioned that galvanised sheets corroded rapidly if coated with tar.—Mr. White questioned the accuracy of the inference drawn from a case mentioned in the note that ammonium chloride was the cause of corrosion. There was a general agreement that the subject, whilst of much practical importance, was involved in some mystery, and deserved further investigation by members who had the opportunity.—Notice was given that the June meeting will be devoted to the subject of acetylene, when one of the communications will be by Dr. Clowes. The next agenda paper will also contain a question to which replies are requested as to the amount of total air usually found in the waters of rivers and canals, and which is given off in vacuo. This is an important matter to the makers and users of pumps for town supplies and other purposes.

### STANDARDISING NORMAL ACID WITH BORAX.

By FRANCIS BERGAMI.

MORE than thirty years ago, Th. Salzer recommended the use of borax for the alkalimetric measurement of acids, but his proposition attracted very little attention until E. Rimbach published his work on the determination of the atomic weight of boron. Since that time, several other chemists have tried to introduce the use of borax for the standardising of normal acid, but they all propose either methyl orange or litmus as indicators for this purpose. Mr. L. F. Kebler stated some time ago, before the Chemical Section of the Franklin Institute, that methyl orange proved to be of inferior value in his hands, as well as in the hands of other chemists. Litmus enables one to obtain satisfactory results, but it requires a great deal of practice, as the change of colour in borax solutions is not as distinct as could be desired for routine work, especially by inexperienced workers. I am, therefore, surprised that so little attention seems to have been paid to the researches of Robert T. Thomson, on larmoid.

Thomson found that larmoid, while its properties as an indicator are nearly the same as those of methyl orange, excels the latter substance by far in regard to sensitiveness, and allows an absolutely correct titration of the alkali in borax solution. A double recrystallisation of the commercial c.p. borax yields a strictly pure product, and, by the aid of this and larmoid as indicator, the standardising of normal acid becomes not only a very convenient, but also an extremely accurate operation.



## The Patent List.

*It is compiled from Official sources in the Manchester Laboratory, under the immediate supervision of J. Davis and Alfred R. Davis, who report professionally on the value of Chemical Patents.*

### APPLICATIONS FOR ENGLISH LETTERS PATENT.

Sewage, etc. W. Birch. 9,374. May 4.  
 Pig Iron. E. Rousseau. 9,408. May 4.  
 Chlorine Gas. P. Jensen. 9,544. May 5.  
 Auriferous Slimes. J. H. Pollock. 9,577. May 5.  
 Fuels. R. Bradshaw. 9,599. May 6.  
 Precipitation Tanks. H. Walker. 9,205. May 6.  
 Drying Apparatus. E. d'Huort, M. Glaesener, and G. Glaesener. May 6.  
 Solids from Vacuum Pans. R. H. F. Finlay. 9,709. May 7.  
 Coloured Enamels. W. H. Forester and G. Bland. 9,760.  
 Storing and Storing Superphosphates. F. M. Mooney and A. 9,789. May 8.  
 Presses in Filter Presses. J. Williamson. 9,803. May 8.

### ACTS OF LATEST COMPLETE SPECIFICATIONS.

*Abstracts are specially prepared for the Chemical Trade Journal, and the rights of publication are reserved. This is the earliest abstracts of Chemical and allied patents accessible to the*

*Abstracts in Electrolytic Processes and Apparatus Therefor.* G. B. Trieste, Austria. Eng. Pat. 5,098. March 6, 1895.  
 The invention relates to an apparatus for electrolysis sea water in such a manner that the caustic soda formed is collected in one porous vessel and the magnesium and calcium oxides in another. These collecting vessels are so constructed that one simultaneously forms the anode and the other is of such a shape as to conveniently hold the cathode which is of carbon. For particulars of the cells the eight figures should be consulted.

*Improvements in Apparatus for Treating Paper Pulp.* L. Naeyer, Leek, Belgium. Eng. Pat. 12,461. June 27, 1895.  
 The improvements are of a purely mechanical nature. A rectangular vessel is divided into three longitudinal chambers by two perforated partitions. The two outer chambers are provided with stirring blades, and force the pulp through the partitions into the central chamber in which the purified pulp collects, and is removed by suitable means. There are two drawings.

*Improvements in the Manufacture of Sulphate of Lead and Lead Oxide.* H. R. Gregory, 5, Amerland-road, Wandsworth. Eng. Pat. 11,185. May 18, 1895.

The process for producing sulphate of lead a quantity of galena in a state of division is thoroughly mixed with a suitable quantity of an alkaline earthy magnesian carbonate. This mixture is roasted at a low red heat in a retort or furnace, with occasional stirring, until all the sulphur is indicated by the mixture assuming a light brown colour. The roasted mixture is diluted to the consistency of cream, in cold water. Sulphuric acid is added, and the whole washed with soluble matter. The residue is mixed with large excess of water, and the solution is filtered. The filtrate is concentrated in closed boiling pans fitted with agitators. When at about the consistency of caustic soda is added, and the agitation and boiling continued.

Eventually the whole is allowed to settle and the clear liquid is decanted off. The insoluble residue contains the lead as hydrated oxide, and is recovered by dilute nitric acid is added in more than sufficient quantity to convert all the lead into nitrate, which salt is finally decomposed by sulphuric acid, and the precipitated sulphate of lead washed with water.

The process may be shortened by treating with nitric acid, immediately after the first treatment with sulphuric acid. The residue obtained by the full process, however, is claimed to be better adapted for pigmentary purposes.

*Improvements in or Partitions for Electrolytic Purposes formed of Carbonaceous or Alkaline Earths.* S. S. Bromhead, 92, Newgate-street, London. (Communicated by La Soc. Anon des Anciennes Salines Domaniales de l'Actien Gesellschaft, Dienne, Lothringen, Germany.) Eng. Pat. 11,185. December 12, 1895.

The object of the invention is to overcome the difficulties that have always surrounded the maintenance of a suitable osmotic diaphragm for electrolytic purposes. It is made in the direction of employing alkaline earths. The diaphragm is shaped by mechanical means to form pots, plates, and is of a particular material has been found specially suitable for the electrolysis of alkaline chlorides, the well-known action of chlorine gas on finely divided chalk.

*Ozone Compounds for Medicinal Purposes.* E. Langheld, 16, Sophien-Charlotten-strasse, Charlottenburg, Germany. Eng. Pat. 5,672. March 17, 1896.

This patent does not deal with any applications of ozone that appeal to the interest of the chemical trade. It merely deals with a simple method of preparing ozonised solutions of quinine salts or animal oils, such as cod liver oil.

## Parliamentary Notes.

### LOCOMOTIVES ON HIGHWAYS BILL.

In the House of Lords, on Tuesday, the House went into Committee on this Bill.

Lord Harris moved to amend Clause 1 by substituting four tons for two as the *maximum* weight of unladen vehicles exempted from enactments restricting the use of locomotives on highways. He remarked that the President of the Local Government Board had agreed to make this amendment in deference to representations which had been made to him.

Lord Thring agreed that the *maximum* weight of unladen vehicles should be raised, but he suggested that some limit should be placed on the load that the vehicle might carry, and that there should be flexibility in the Bill to encourage inventions for distributing the weight between two vehicles.

The Earl of Kimberley said no doubt many improvements would be made in the development of these vehicles, and power should be given to make bye-laws, as to weight and width of wheel (subject to the consent of the Local Government Board and the Secretary of State), to meet unexpected changes and inventions.

Lord Harris said, with regard to weight, the erection of a large number of weighing machines would be necessary all over the country, and obviously in London, and it would be ridiculous to expect carriages carrying persons to be weighed whenever a policeman or some one else demanded it. He did not think Lord Thring's suggestion was a practical one. His instructions were to adhere to the *maximum* weight of carriage unladen and not to refer to the weight of a loaded carriage. The other points alluded to he would bring under the attention of Mr. Chaplin. But he would ask their lordships to accept the Bill now, as he was not empowered by Mr. Chaplin to accept any suggestions at present for further amendments in the Bill.

The amendment was then agreed to.

Lord Harris then moved to omit the latter part of the clause and insert the following:—“(a) Section 26 of the Highways and Locomotives Amendment Act, 1878, shall apply to light locomotives as if they were drawn by animal power, and as so applied shall extend to London; (b) a light locomotive shall be deemed to be a carriage within the meaning of any Act of Parliament, whether public, general, or local, and of any regulation made under any Act of Parliament, and, if used as a carriage of any particular class, shall be deemed to be a carriage of that class, and the law relating to carriages of that class shall apply accordingly.” Lord Harris said the principle of section 26 of the Highways and Locomotives Amendment Act, 1878, had been extended by section 41 of the Local Government Act, 1888. The former section empowered local authorities to make various regulations as regarded width of wheel, skids going down hill, and other matters. It had been pointed out that the clause was not clear as to the law that would apply. It was considered doubtful whether the Inland Revenue could levy a tax for this class of carriage, and the clause had been amended to make it perfectly clear that, whatever the kind of carriage might be, and whether the Act of Parliament was a public, general, or local Act, the Act and any regulations under it would apply to these carriages.

The clause, with the proposed amendment, was agreed to.

Lord Harris moved to amend Clause 2, which regulates the keeping and use of petroleum, or any other inflammable liquid, by substituting £10. for £2. as the fine for any breach of the regulations. He remarked that it had been considered that a penalty of £2 was not sufficient, and that it was desirable to make it heavier.

The clause, with this amendment, was agreed to.

Lord Harris moved to omit from the Bill Clause 3, which provided a penalty of £10 for negligently driving a light locomotive or suffering it to be without due control. He said that the statutory provisions which the House had approved in Clause 1 rendered this clause unnecessary, for the ordinary law as regarded negligent and furious driving would apply as much to locomotives as to any other kind of vehicle.

The omission of the clause was agreed to.

Clause 4, which provided that the Local Government Board may make regulations for the use of light locomotives and a fine of £10. may be inflicted for any breach was also agreed to, as well as the insertion, after Clause 4, of certain new clauses of a consequential character.

The Bill then passed through Committee.



## Official Memoranda.

(From the Board of Trade Journal.)

### ARGENTINE REPUBLIC CUSTOMS LAW.

The following is an abstract of the present import duties:—

|                                                   |                 |
|---------------------------------------------------|-----------------|
| Borax .....                                       | 4 % ad valorem. |
| White Lead .....                                  | 10 "            |
| Anhydrous Ammonia .....                           | 10 "            |
| Sulphate of Baryta .....                          | 10 "            |
| Coal Tar and Pitch .....                          | 10 "            |
| Dégras .....                                      | 10 "            |
| Sulphate of Lime .....                            | 10 "            |
| Flowers of Sulphur .....                          | 5 "             |
| Heavy Tar Oils .....                              | 5 "             |
| Mercury .....                                     | 5 "             |
| Resin .....                                       | 5 "             |
| Nitrate of Potash (crude) .....                   | 5 "             |
| China Clay .....                                  | 5 "             |
| Soda Crystals .....                               | 5 "             |
| Soda Ash .....                                    | 5 "             |
| Nitrate and Sulphate of Soda .....                | 5 "             |
| Silicate of Soda .....                            | 5 "             |
| Caustic Soda .....                                | 5 "             |
| Sulphate of Alumina .....                         | 5 "             |
| Cocanut, or palm oil .....                        | \$0 05 cents.   |
| Farina .....                                      | 0 05            |
| Common salt .....                                 | 0 02            |
| Fine salt, in kegs .....                          | 0 01            |
| Kerosene .....                                    | 0 01½           |
| Candles of Stearine, Paraffin, and Mixtures ..... | 0 10            |

### IMPORTATION OF AMMONIA INTO UNITED STATES.

A communication has been received at the Foreign Office from Mr. A. G. Vansittart, Her Majesty's Consul at Chicago, stating that a considerable amount of ammonia is being imported by the packing houses established in Kansas City and throughout the West for freezing and cooling purposes.

It appears the demand exceeds the American supply. As these houses must keep a large supply ahead, one important firm in Kansas City has contracted for a whole year's supply of ammonia to come from Berlin.

### CANADIAN WOOD-PULP INDUSTRY.

The *Canadian Gazette* states that the Dominion Government has now under consideration a proposal which has often been urged upon Canada for an export duty of two dols. per cord upon pulp wood, so as to discourage the export of the raw material from Canada, and encourage its manufacture into pulp in Canadian mills. At present the United States tax on imported pulp is ten per cent., while pulp wood is free. A Canadian export duty would, it is claimed, induce the United States to remove their duty; this the Canadian Association think would give them control of the trade. At present Canada exports about 500,000 cords of pulp wood yearly, so that the proposed export duty would, it was said, yield a revenue of 1,000,000 dollars annually. The exporters of pulp wood, of course, object to such an impost. As it is, they have their hands full, they say, to compete with the pulp wood sellers of Virginia and Maine.

On the face of it, Canada is wise to encourage her own manufacturers. Her exports of the raw material, *i.e.*, pulp wood, practically all of which goes to the United States, have been as follows:—

|             | Dols.   |
|-------------|---------|
| 1890 ... .. | 108,998 |
| 1891 ... .. | 219,458 |
| 1892 ... .. | 386,092 |
| 1893 ... .. | 392,262 |
| 1894 ... .. | 468,359 |

Which shows a constantly increased export of raw material. The pulp wood exported in 1894 would be capable of producing mechanical pulp to the value of £400,000. sterling, or about five times the value of the pulp wood now exported. If converted into chemical pulp the export value would be no less than £700,000. sterling.

As it is, Canada is doing an increasing export trade in pulp as well as in the wood. The exports of pulp stand thus:—

|             | Dols.   |
|-------------|---------|
| 1890 ... .. | 168,180 |
| 1891 ... .. | 280,619 |
| 1892 ... .. | 355,303 |
| 1893 ... .. | 455,893 |
| 1894 ... .. | 547,217 |
| 1895 ... .. | 590,874 |

Showing also again a steady annual increase.

The British demand for wool pulp is largely on the increase. The imports for 1895, for example, were of the value of £1,574,400 (297,098 tons), an increase of £150,000. over 1894.

There is a further stage to which Canadian mills should carry the wood-pulp business, namely, to the stage of paper manufacture. The United Kingdom imported last year unprinted paper to the value £2,046,106, and strawboards, mill-boards, and wood-pulp boards to the value of £548,254. The exports of paper from the United States were last year of the value of about £500,000. sterling. Canada, with her forest resources and unlimited water power, should certainly take her place in the business. At present Great Britain looks chiefly to Germany, Holland, Sweden, and Belgium for her imported unprinted paper.

### THE CHAT MOSS REFUSE WORKS.

COLONEL J. O. HASTED, inspector of the Local Government Board, held an inquiry at the Town Hall, Manchester, recently, with reference to an application by the Manchester Corporation for power to borrow £55,000. for the execution of works on the Chat Moss estate. Mr. Thomas Hudson, deputy town clerk, appeared on behalf of the Corporation, and Mr. J. H. Boardman, solicitor, watched the inquiry for the Manchester, Salford, and District Property Owners' Association.

Mr. Hudson said the inquiry was a supplemental one, the matter having been fully investigated at an inquiry held by the late Mr. S. J. Smith, in May, 1893. On that occasion a large number of witnesses were examined in support of the proposal, and evidence in opposition was given by representatives of the Barton-upon-Irwell Rural Sanitary Authority and other authorities. Application was at that time made for the borrowing of a sum of £200,000., and the Local Government Board sanctioned the borrowing of £145,000., which represented the estimated cost of the land and the expense of laying it out. The Board gave its sanction on the understanding that the City Council was prepared to carry out the necessary works to furnish a sufficient supply of water for the farms and dwellings on the estate. The Local Government Board further stated, in the letter in which it gave its sanction to the borrowing of the £145,000., that it deferred consideration of the works proposed to be erected on the estate until the detailed plans and estimates had been prepared. With regard to the water supply, the Corporation had not yet completed that supply, the intention being that this should be done as the homesteads were restored. Many of the houses were in a bad condition, this being due, as he understood, to the fact that Chat Moss had been held under a lease for 99 years, and that that lease was on the eve of expiration. When the lease had expired and the Corporation took possession, it was proposed to put the buildings in a proper state of repair, and when that was done a supply of water would be provided. Of the £145,000. borrowed, a sum of £5,600 had not yet been expended, and it was proposed to use this for the purpose of the water supply. As to the other works now in contemplation, the Local Government Board had itself urged the Corporation to go on with the works, so that it was not anticipated that there would be any difficulty now.

Mr. Boardman said it might simplify matters if he explained that he did not propose to offer any opposition.

Mr. John Richards, chairman of the Cleansing Committee of the Corporation, gave details of the works which are considered necessary in treating and disposing of the refuse sent out from the city to Chat Moss. The chief item in the £55,000. is a sum of £21,500. for the erection of sixteen new homesteads to replace certain houses which were at present in a very dilapidated condition, and for the restoration of such of the existing houses as may be considered worth being dealt with in this way. Those houses are to be tenanted by labourers on the estate. Another item is £8,000. for a light railway which is to be carried over the estate and down to the dock which it is proposed to construct at Boysnope on the Ship Canal under an agreement which has been come to with the Manchester Ship Canal Company. The other works include a light portable railroad, a system of drainage to take the place of the present open drains, offices, workshops, and stables near the Boysnope dock, and a post and rail fence to enclose such parts of the estate as are unenclosed or dangerous.

Mr. R. D. Callison, indoor superintendent of the Cleansing Department of the Corporation, and other witnesses were afterwards examined.

At the close of the inquiry the inspector paid a visit to Chat Moss.

ALKALINE REDUCTION SYNDICATE.—The hearing of the application on behalf of the liquidator of the Alkaline Reduction Syndicate, Limited, to settle the list of the contributories was resumed on Saturday last by Mr. Justice Vaughan Williams, sitting in the Companies (Winding-up) Court as an additional Judge of the Chancery Division. By the motion the court is asked to settle on the list of 16 gentlemen who dispute liability. The hearing was again adjourned.



## THE MINERAL PRODUCTION OF THE U.S.A.

THE following interesting particulars of the production of minerals in the States during 1895 are given in the advance sheets of Mr. R. P. Rothwell's excellent annual compilation of "Mineral Statistics":—

|                                                 | 1894.      | 1895.      |
|-------------------------------------------------|------------|------------|
| Alum, short tons .....                          | 72,000     | 75,000     |
| Antimony ore, short tons .....                  | 165        | 1,083      |
| Asbestos, short tons .....                      | 265        | 1,010      |
| Fibrous talc, short tons .....                  | 50,500     | 66,500     |
| Talc and soapstone, short tons .....            | 21,044     | 18,885     |
| Asphalt, short tons .....                       | 4,198      | 14,300     |
| Bituminous rock, short tons .....               | 34,199     | 43,778     |
| Barytes, short tons .....                       | 23,758     | 20,255     |
| Bauxite, long tons .....                        | 10,732     | 14,145     |
| Borax, pounds .....                             | 13,140,584 | 13,506,356 |
| Bromine, pounds .....                           | 379,444    | 394,854    |
| Cement, natural hydraulic, bbls., 300 lbs. .... | 7,813,766  | 7,694,053  |
| Cement, Portland, bbls., 400 lbs. ....          | 611,229    | 749,059    |
| China clay, short tons .....                    | 24,552     | 30,910     |
| Cobalt oxide, pounds .....                      | 6,550      | 6,400      |
| Copperas, short tons .....                      | 14,897     | 14,118     |
| Copper sulphate, pounds .....                   | 60,000,000 | 45,000,000 |
| Graphite, pounds .....                          | 770,846    | 392,008    |
| Graphite, amorphous, short tons .....           | 165        | 1,100      |
| Gypsum, short tons .....                        | 301,536    | 298,572    |
| Lime, bbls., 200 lbs. ....                      | 56,750,000 | 60,000,000 |
| Magnesite, short tons .....                     | 1,370      | 2,200      |
| Mica, ground, pounds .....                      | 829,500    | 750,000    |
| Paints, mineral, short tons .....               | 47,593     | 47,084     |
| Paints, vermilion, short tons .....             | 91         | 118        |
| Paints, white lead, short tons .....            | 87,242     | 92,000     |
| Paints, zinc oxide, short tons .....            | 22,814     | 22,690     |
| Petroleum (crude), bbls., 42 gals. ....         | 48,527,336 | 50,652,025 |
| Phosphate rock, long tons .....                 | 952,155    | 831,498    |
| Pyrites, long tons .....                        | 107,462    | 81,000     |
| Salt, evaporated, bbls., 280 lbs. ....          | 11,798,659 | 12,521,498 |
| Salt, rock, bbls., 280 lbs. ....                | 2,341,922  | 1,367,638  |
| Sulphur, long tons .....                        | 441        | 12,000     |
| Aluminum, pounds .....                          | 817,600    | 900,000    |
| Antimony, short tons .....                      | 220        | 433        |
| Lead, short tons .....                          | 160,867    | 156,854    |
| Quicksilver, flasks, 76½ lbs. ....              | 30,440     | 33,978     |
| Zinc spelter, short tons .....                  | 74,004     | 81,858     |

**LEAD.**—The production of lead from domestic ores in 1895 showed a decrease from the previous year. It amounted to 142,298 metric tons (156,854 short tons), a decline of 2.5 per cent. This was due to the very large quantity of lead smelted from foreign ores or refined from foreign bullion, the total consumption showing a considerable increase. The details of production and consumption are shown in the following table:—

| PRODUCTION OF LEAD IN 1895.         |                       |                 |
|-------------------------------------|-----------------------|-----------------|
| Production:                         | Tons of<br>2,000 lbs. | Metric<br>tons. |
| Desilverised .....                  | 119,057               | 107,985         |
| Non-argentiferous .....             | 32,797                | 29,747          |
| Antimonial .....                    | 5,000                 | 4,535           |
| Total, domestic .....               | 156,854               | 142,267         |
| Refined from foreign ores .....     | 70,745                | 64,166          |
| Total output of American works .... | 227,599               | 206,432         |
| Imports, refined .....              | 23,412                | 21,235          |
| Balance of crude imported .....     | 6,314                 | 5,727           |
| Stock Jan. 1, 1895:                 |                       |                 |
| At works .....                      | 5,453                 |                 |
| In bond .....                       | 7,181                 |                 |
|                                     | 12,634                | 11,459          |
| Total supply .....                  | 269,986               | 244,877         |
| To deduct:                          |                       |                 |
| Exports .....                       | 18,130                |                 |
| Stock, Dec. 31, 1895 .....          | 9,110                 |                 |
| In bond, Dec. 31, 1895 .....        | 9,865                 |                 |
|                                     | 37,105                | 33,654          |
| Consumption .....                   | 232,881               | 211,223         |

**QUICKSILVER.**—There was a marked increase in production in 1895, the total being 1,219 metric tons (35,122 flasks), against 1,056

metric tons (30,440 flasks) in 1894. The metal was entirely from the California mines, no new sources of production having been developed during the year.

**ZINC.**—The total production of spelter, or commercial zinc, in 1895 was 74,245 metric tons (81,858 short tons). The year was marked by an extension of mining and of output to an extent greater than the consumption, resulting in continued low prices. With the present abundant supply these may be expected to continue until new uses are found for the metal and the demand is correspondingly enlarged; unless indeed, the combination which now controls a large part of the production of spelter should attempt to advance prices above 4 cents per pound, when a further restriction in consumption might be expected.

**ALUM.**—The growth of this industry is steady and satisfactory, as is shown by the large production. Some alum is made from imported bauxite and other materials, including cryolite, which is not produced in this country.

**ASBESTOS AND TALC.**—The output of asbestos showed a considerable increase in 1895, chiefly due to the working of mines in Georgia, which have been opened within the past two years. We still continue to import a large part of our supply. The output of fibrous talc was increased to meet a growing demand; it all comes from a limited area in New York, where the mines are actively worked under a combination. The production of talc and soapstone declined slightly.

**ASPHALT.**—The asphalt and bituminous rock reported are chiefly from California. The gilsonite deposits of Utah are not actively worked, owing to difficulties of transportation. The use of asphalt in the United States is rapidly extending, but the chief reliance is on imported material, the island of Trinidad furnishing the largest part of the supply.

**BARYTES.**—There was a slight decrease in this mineral, coupled with an increase in its value.

**BAUXITE.**—A considerable increase is reported, due to the organisation of new companies and the opening of new beds in Georgia and Alabama. No other deposits have been worked.

**BORAX.**—No change in production or methods is to be reported. The output—wholly from California and Nevada—shows a slight increase.

**BROMINE.**—Only slight changes are noted, with no difference in methods.

**COBALT OXIDE.**—The small production showed little change in its amount or sources.

**COPPERAS.**—But little change is reported, but there was a decrease in prices and values.

**COPPER SULPHATE.**—This is an important product, and our exports last year to Europe and Mexico reached a considerable figure.

**FLUORSPAR.**—The single producing mine in Illinois showed a decrease, this being one of the few products which declined in amount.

**GRAPHITE.**—No new developments have been made and the home production is still chiefly controlled by a single interest.

**MAGNESITE.**—The production in 1895 showed a total of 1,995 metric tons (2,200 short tons). It is derived from the California deposits entirely, and the production increases slowly as the use of the material extends.

**MICA.**—The production of 343 metric tons (38,356 pounds) continues to come chiefly from New Hampshire and North Carolina. Some new deposits in Idaho are being developed.

**MINERAL WOOL.**—We have introduced this product for the first time, its manufacture from blast furnace slag representing the partial utilisation of material formerly wasted. There were 6,115 metric tons (6,742 short tons) made in 1895.

**MONAZITE.**—The special demand for this mineral continues to increase, and the total reached 862 metric tons (1,900,000 pounds), or much more than double that of 1894.

**MINERAL PAINTS.**—An increased demand is apparent in the figures of the table. The largest gain is in white lead, of which in 1895 there were 83,462 metric tons (92,000 short tons) of "dry" produced.

**PHOSPHATES AND MARLS.**—The output of mineral fertilizers for domestic use showed some increase, but owing to the diminished exports the total production of phosphate rock fell off both in quantity and in value. The cause of the smaller sale abroad is found to be in part the opening up of the deposits of phosphates in Tunis and Algiers, and in part the use of other sources of phosphoric acid, such as the Thomas slag from the basic steel process.

**PYRITES.**—The total production, chiefly used in the manufacture of sulphuric acid, was 82,296 metric tons (81,000 long tons), showing a decrease from 1894, largely due to the cheapness of imported supplies.

**SALT.**—Of the minerals necessary to existence, salt shows an increase a little greater in proportion than the normal growth of our population, due to our growing chemical industries, and that demand may be expected to continue increasing, as those industries are developed on a scale approximating the growth which they have already attained in Europe.



## ESTIMATION OF SULPHUR IN PYRITES.

A RECENT contribution to the controversy between Mr. Gladding and Dr. Lunge has been made by the former in a communication to the *Journal of the American Chemical Society*. The earlier portions of the discussion appeared in our back numbers (vide C.T.J., Nos. 384, 408, 416, and 440). Mr. Gladding now takes up the thread of the discussion where it was dropped by Dr. Lunge. He says:—In October, 1895, Dr. Lunge continued the discussion of the estimation of sulphur in pyrites. He presents no new experimental support of his position. He indirectly accuses me of having published a "private" communication without the sanction of the writer, Prof. Richards. In reply, I will say that the words of Prof. Richards were published by myself, not only with full permission, but after a careful revision of the same by their author. Had Dr. Lunge addressed a note to Prof. Richards or to myself, he would have been saved from making a most unkind and needless accusation.

While Lunge attempts no further support of his position by chemical experiment, he makes the claim that any occlusion of barium chloride that occurs is compensated for by the solubility of barium sulphate in the acid liquor of precipitation. In his own words "my claim has been that my method by compensation of unavoidable errors, gives correct results."

I have investigated this claim of Lunge's, as far as it applies to the occlusion of barium chloride in his method, in the following manner:—I have had one of our assistants repeat the work with chemically pure sulphate of ammonia, using two grams in each case, making comparison precipitations with a 10% solution of barium chloride, the first by adding the barium chloride solution drop by drop from a burette, the second by sudden addition from a small beaker in which it had been brought to the boiling point. The results were as follows:—

|               | By slow addition. | By sudden addition. |
|---------------|-------------------|---------------------|
|               | Gram.             | Gram.               |
| Sulphur ..... | 0.4840            | 0.4880              |
| Sulphur ..... | 0.4820            | 0.4873              |

These experiments show an occlusion of about 0.040 gram barium chloride and a corresponding error of 0.50 to 0.55% in the estimation of the sulphur present.

I repeated personally the second series of precipitations obtaining:—

|         | Barium sulphate obtained. | Sulphur. |
|---------|---------------------------|----------|
|         | Grams.                    | Gram.    |
| 1 ..... | 3.5480                    | 0.4878   |
| 2 ..... | 3.5430                    | 0.4871   |

These experiments show an error of about 0.55% in the estimation of sulphur present. The greatest care was taken in washing these precipitates. Three washings by decantation, using seventy-five cc. of hot water each time, were followed by five washings on the filter paper.

I now fused these precipitates with chemically pure sodium carbonate, dissolved the flux in water, filtered from barium carbonate, acidified the filtrate with nitric acid, added silver nitrate and from the silver chloride obtained, calculated the equivalent of barium chloride. I obtained in one case 0.0552 gram silver chloride, corresponding to 0.040 gram barium chloride; in the other, 0.0500 gram silver chloride, equivalent to 0.0364 gram barium chloride. Deducting these figures we have:—

|                                       |        |        |
|---------------------------------------|--------|--------|
| BaSO <sub>4</sub> .....               | 3.5480 | 3.5430 |
| BaCl <sub>2</sub> .....               | 0.0400 | 0.0364 |
| Pure BaSO <sub>4</sub> obtained ..... | 3.5080 | 3.5066 |

The sulphur obtained from these corrected results are 0.4823 gram and 0.4821 gram. These corrected results agree very closely with those obtained by our assistant when using the dropping method. I now fused one of the precipitates obtained by the dropping method with sodium carbonate in the same way, and obtained 0.0027 gram silver chloride, equivalent to 0.002 gram barium chloride. This shows that the occlusion of barium chloride is practically avoided by adding the barium chloride drop by drop, as 0.002 gram barium chloride would cause an error of only 0.026% in sulphur.

I now took up the question of the solubility of barium sulphate in the acid liquor of precipitation, imitating the conditions under which the actual analysis of pyrites is made. To 400 cc. water were added fifteen cc. strong ammonia. Hydrochloric acid was now added to acidify. To two such preparations I added 0.020 gram and 0.040 gram chemically pure ammonium sulphate, respectively. The solutions were brought to the boiling point and ten cc. barium chloride added. The liquid was boiled till clear and allowed to settle. I obtained:

|         | Barium sulphate. | Sulphur obtained. | Sulphur present. |
|---------|------------------|-------------------|------------------|
|         | Gram.            | Gram.             | Gram.            |
| 1 ..... | 0.034            | 0.00468           | 0.00484          |
| 2 ..... | 0.069            | 0.00949           | 0.00969          |

The sulphur lost by the solubility of the barium sulphate in the acid solution in the above experiments amounts to 0.016 and 0.020% respectively.

The above work demonstrates conclusively that the method employed by Lunge of adding the barium chloride all at once causes an error of about 1% in the percentage of sulphur, and that such error is not compensated for by the solubility of barium sulphate in the liquor of precipitation, as such solubility is very slight, causing an error of less than 0.03%.

In his first reply (March, 1895), Dr. Lunge objected to my method of estimating the 0.20 to 0.40% of sulphur (that may be left in the ferric hydroxide), by the simple process of dissolving the latter in dilute hot hydrochloric acid, adding ten cc. of barium sulphate solution and letting stand over night. This he declared was wrong, owing to the solubility of barium sulphate in such solution. I showed by a few simple and rigid experiments that I was entirely right. These experiments were very easily capable of repetition. But Lunge did not choose to repeat them. The above experiments showing that the sudden addition of barium chloride will cause an error of several tenths of a percent. are likewise very easily repeated, and the separation of the occluded barium chloride as described, is so positive as to the error caused by Lunge's method of procedure, that I hope for a further answer from Dr. Lunge. On account of the commercial importance of an accurate estimation of sulphur in pyrites, I have no doubt that a prompt repetition of my work as described above will soon be published by some other analyst, and the main point at issue, namely, the necessity of a very slow addition of the barium chloride solution, be settled.

## MOENANIA-LITHOPONE WHITE.

BY PAUL SCHUELLER.

LITHOPONE white is a pigment which is, of late, being used more and more in preference to other colours. It is well known that there is a great difference in the Lithopone of various makers, and, for this reason, no Lithopone white should be bought without first knowing its source of origin.

The Chemical Works, Moenania (for which Messrs. Schmitz-Jérôme and Knopff, of Hanover, are the sole representatives for exportation), are producing a snow-white and non-poisonous Lithopone white, which possesses a very high covering power, and mixes advantageously with other colours. Practical trials have proved the superiority of the Moenania-Lithopone in regard to body. For instance, for painting 100 square metres the following quantities of colour have been used:—

|                            |         |
|----------------------------|---------|
| White lead .. .. .         | 43 lbs. |
| Zinc white .. .. .         | 37 "    |
| Moenania-Lithopone .. .. . | 28 "    |

This is a very fair result. Besides this saving of material, there is the price of Moenania-Lithopone to be considered, this white being 15 to 20 per cent. cheaper than white lead, while it gives a most elastic and durable coat, which retains its original brightness, even in the presence of sulphurous acid. It is generally known that the sulphurous acid developed by fires and gas in living rooms affects white lead paint, and turns the same into lead sulphide, which has a nasty appearance. This will never occur where Lithopone white has been used, provided it has been ground in a pure oil (linseed oil, containing siccatives free from lead, being most suitable).

Lithopone white is also used for enamelling purposes, and in the manufacture of india-rubber goods, oilcloth, etc.

It will be apparent from the above that Moenania-Lithopone merits the full consideration of the trade as an excellent permanent white.

THE SANITARY INSTITUTE.—The council have accepted an invitation from the city and county of Newcastle-upon-Tyne to hold a Sanitary Congress and Health Exhibition in that city in the autumn of this year.

TRADE MARKS IN EGYPT.—The Board of Trade have received information through the Foreign Office that it is possible to register trade marks at the Registry of the Mixed Tribunals in Egypt. A certain advantage is found to accrue from such registration in the event of legal proceedings having to be taken for infringement. The Board of Trade desire, therefore, to press on the attention of those of Her Majesty's subjects who may desire, or intend, to engage in trade with Egypt, the necessity of promptly securing registration of their trade marks in Alexandria. In a trade mark case decided on the 18th of April last by the Court of First Instance at Alexandria, the judgment laid down that the plaintiff was not entitled to the publication in the newspapers of the judgment given in his favour at the expense of the defendant, as, although he had registered his mark, yet he had neglected to make such registration known to the public, both commercial and private, in Egypt, through the medium of the press. We understand that this question has been occupying the attention of the British Chamber of Commerce in Egypt, and that of one of their honorary legal advisers, Mr. J. E. Marshall, barrister-at-law.



## REVERTED PHOSPHATE.

CIPITATED, reduced, or reverted phosphate, any of these three titles being employed to signify the same substance, is a constituent of such importance to manufacturers and purchasers of fertilisers that a brief consideration of the distinctions between it and soluble phosphate on the one hand, and undissolved, or, more commonly called, insoluble phosphate of these manures, on the other, becomes unquestionably eminently desirable.

Reverted phosphate, then, consists of phosphate which has originally been rendered soluble by the sulphuric acid used in the process of preparation, but subsequently owing to the various reactions, has once again taken a form that is not capable of dissolving in water. Consequently, should probably readily infer, the proportion discovered in made samples can never amount to any very material quantity; percentage, however, occurring in pure dissolved bones, dissolved impurities, and similar products in the condition they are usually in commercially, that is to say, of course, after having undergone a reasonable period of storage, is not unfrequently sufficiently large to appreciably affect their market value, a statement acquiring a forcible emphasis when articles of superior quality are compared with those whose soluble phosphate is peculiarly liable to the modification mentioned.

Any obvious outcome of the foregoing facts must be that a specimen of pure dissolved bones, for example, guaranteed to contain some percentage of soluble phosphate, and, at the time of manufacture amply complying with the requirements, may, if kept for some months, on account of taking place, quite possibly afford when again analysed, a result seriously below the desired standard, thus furnishing the buyer with ground for complaint, because as he had bargained for soluble phosphate, evidently reverted phosphate cannot be substituted for it, such a stipulation has been expressly agreed upon, although the circumstances suggested we might reasonably consider the product possessed a practical value almost equal to any it ever had.

No doubt the always more or less marked tendency of soluble phosphate in manures to "go back" will be regarded as a decidedly undesirable attribute by everyone interested; yet concerning the matter already noticed, we can only accept as inevitable an action closely associated with the use of indispensable raw materials, for it is absolutely unpreventable by any known means. When, therefore, we proceed to speak of mineral superphosphate, we speedily find that the cases are not altogether parallel, because with reference to the latter product, the drawback can in very great measure be overcome by a judicious selection of ingredients and skilful preparation. Substances through whose influence the transformation in soluble phosphate is brought about are chiefly oxide of iron, alumina, organic undissolved phosphatic materials, and carbonate of lime. In these matters, as we have already pointed out, manifestly cannot be excluded, but this remark does not apply to the exceedingly insoluble oxide of iron and alumina, which, unlike nitrogenous matter, for instance, are virtually unendowed with fertilising qualities of their own, and, moreover, are particularly apt to induce the action of soluble phosphate; therefore, we perceive immediately why raw materials containing a relatively excessive amount of these compounds are carefully avoided by manure manufacturers, and, early enough, were such ingredients employed, it would be impracticable to give a warranty of percentage composition, or to do business with any degree of confidence.

We are now instinctively led by our reflections to endeavour to compare the comparative agricultural value of reverted phosphate. Evidently, as the preceding observations must unmistakably demonstrate, it is totally different from soluble phosphate, and while unexpressing our opinion regarding its superiority over insoluble phosphate, which never has been soluble, and also contending that good manure, which owing to storing has accumulated considerable quantities of reduced phosphate, will be imperfectly appreciated if the factor is omitted in estimating its actual worth, yet we feel constrained to insist that regarding practical usefulness it in no way approaches that pertaining to phosphate retaining the soluble form. Accordingly we are disposed to believe the demands of the farmer may be most effectually satisfied if farmers are advised to allot to phosphate an intermediate position between that occupied by soluble phosphate and insoluble, *i.e.*, undissolved phosphate, as it is in the form of bone. Undoubtedly there are a certain number of persons to be met with who would strongly advocate the claims of insoluble phosphate to be placed considerably higher in the scale of revalue than we have indicated, very probably supporting their remarks by stating that soluble phosphate itself shortly after application to the land becomes incapable of dissolving in water, although still available to plants, and unquestionably this statement is very true. Before, however, the alteration referred to takes place, the soluble phosphate has become diffused generally through the soil, and has brought within easy reach of the roots, in a way so thorough

as to be altogether unattainable for any insoluble body. Consequently, apart surely from every other consideration, this complete distribution and ultimate precipitation in a chemically divided condition must alone confer upon soluble phosphate infinitely greater advantages.—*Mark Lane Express.*

## Trade Notes.

**INCREASED SALT SHIPMENTS BY THE SHIP CANAL.**—A return of the exports of salt from the Mersey shows that, while there has been a more or less steady diminution in the Liverpool shipments as compared with last year, the salt trade of the Ship Canal continues to increase. During April the total shipments from the Mersey were 49,217 tons, compared with 48,879 tons in April, 1895. Of these 36,852 tons were shipped from Liverpool (compared with 37,094) and 12,365 tons from Runcorn and Weston Point (compared with 11,785 tons). The total shipments for the first quarter of this year amounted to 103,128 tons, compared with 114,419 tons in the corresponding period of 1895. Of this total 83,600 tons were shipped from Liverpool (compared with 102,724 tons last year) and 19,528 from Runcorn and Weston (compared with 11,695 tons). It will thus be seen that, whereas the salt exports from Liverpool during the first quarter of 1896 showed a falling off of 19 per cent., the exports from the Ship Canal increased during the same period by 67 per cent.

**CENTRAL AMERICAN INTERNATIONAL EXHIBITION.**—The London Chamber of Commerce has been requested by the Under Secretary of State for Foreign Affairs (Mr. Curzon) to render such assistance as it possibly can in giving publicity to the Central American International Exhibition, which is to be held in the capital of Guatemala, from March 15th to July 15th, 1897. Although it was decreed by the National Assembly that this should be a Central American Exhibition, still the Government are earnestly desirous for foreign nations to participate, and exhibits from any country will be admissible so far as they fall under: Science and letters, education, fine arts, mechanics and construction, agriculture, horticulture, arboriculture, special cultivation, fauna and floral, ornamentation, various industries, natural products, transport, mining, and immigration. In a special despatch to the Foreign Office, British Consul Roberts reports that at the present time the quality of British goods finding their way to Central America compares favourably with other countries, except the United States. Still it appears to him that the exhibition might be made a means of yet further introducing British productions, if British merchants would support it. At the present time there is a great demand for machinery (for railway construction, coffee cultivation, sugar cultivation, &c.) and hardware of every description, improved appliances for dairy purposes, electric light and motive power plant, bicycles, &c.; all clothing materials, musical instruments, cutlery, jewellery, food stuffs, fancy goods, and articles of *luxe* generally. To encourage exhibitors, their invoices of goods for display will be free of Consular fees, and the exhibits will be allowed to enter free of duty—only becoming liable to duty when sold in the country, except in the case of articles gaining a prize, which will be altogether exempt from duty even on sale. It would be necessary, in the Consul's opinion, for exhibitors to have some gentleman of good standing, well acquainted with commerce and the requirements of the country, to represent the English Section, receive orders, and to act as intermediary between the exhibitors and the purchasing public, so as to build up a permanent increase in the use of English goods. Applications for space must be addressed to the Central Committee at Guatemala before the 31st August next, and detailed information in this connection, as well as the text of the general regulations and of the Consul's despatch, may be seen on application at the London Chamber of Commerce, Eastcheap, E.C., between the hours of 10 a.m. and 5 p.m.

## Market Reports.

### TAR AND AMMONIA PRODUCTS.

Benzols are firmer, the price for 90's now being 2s. 4½d. prompt, and 2s. 3d. to 2s. 4d. July-December; 50/90's 2s. to 2s. 1d. prompt. Carbolic acids are quiet, 60% crude being quoted 2s. 1d., and 40% crystals 7d. Crude naphtha is fairly steady at 8d., and solvent easier at 1s. 2d. Creosote is firm. Pitch rather firmer, prices now ranging 32s. to 32s. 6d., f.o.b. East Coast.

Sulphate of ammonia is in much better demand, both for prompt and autumn delivery. Buyers are more eager about prompt business, but are slow to pay the advance asked for forward. Prices are: London outside makes £8. 2s. 6d., Hull £8. 1s. 3d., Liverpool £8. 1s. 3d., and Leith £8. Forward Beckton £8. 5s. to £8. 10s. Hull £8. 2s. 6d., July.



## MISCELLANEOUS CHEMICAL MARKET.

The trade in alkalis generally is not marked by any special degree of activity, but there is a fairly good all round demand for the various products, and prices also are steady. Caustic soda remains in the same position as for some time past, spot quotations being as follows—f.o.b. Liverpool, 77%, £9. 7s. 6d. per ton; 74%, £8. 7s. 6d. per ton; 70%, £7. 7s. 6d. per ton; 60%, £6. 7s. 6d. per ton, 10 ton lots and upwards. Ammonia alkali unchanged at £3. 7s. 6d. per ton, bags, f.o.r. makers' works. Soda crystals 35s. per ton, bags, f.o.r. Bicarbonate, bags £6, f.o.r., and kegs £6. 15s., f.o.b. Bleaching powder remains steady at £6. 10s. per ton, f.o.b. Tyne, and £6. 15s. to £7. 5s., f.o.b. Liverpool; softwoods, f.o.r. makers' works, £6. 15s. to £6. 17s. 6d. per ton. Chlorate of potash slightly easier at 4½d. per lb.; soda 6d. per lb. Sulphate of copper: £18. 15s. to £19. per ton is still current quotation. Recovered sulphur £3. 12s. 6d. per ton, f.o.r. Acetate of lime (brown) quiet, and is without further change in value; grey in better demand. White sugar of lead and other acetates have rather an easier tendency. Potash, caustic and carbonate, are still in good request, and prices are firmly maintained. White powdered arsenic continues scarce, and with the limited output prices are held firm, both for prompt and forward delivery. Nitrate of soda steady at £8. per ton. Borax and boracic acid selling freely, and prices of the syndicate are firmly maintained. Yellow prussiate of potash quiet at 7d. to 7½d., according to make. Bichromates unchanged. Chromic acid 7d. to 7½d. per lb., according to quantity. Sulphocyanides without alteration in value. General y in the textile districts demand for chemicals is quiet, owing to the approaching Whitsuntide holidays.

## LIVERPOOL MINERAL MARKET.

During the last week our market has ruled very brisk. Manganese: Arrivals are *nil*; stocks are exhausted, and prices are strong; forward deliveries are slow, and higher prices are sought. Ground manganese is unaltered, the demand continuing good at £6., £8., £10., and £12. 10s per ton, according to quality. Manganiferous iron ore is in brisk demand. Chrome ore: There have been more arrivals, and prices are steady. Bauxite: The demand continues good, and prices are unaltered at 20s. for firsts, 16s. for seconds, and 12s. for third quality, f.o.b. French chalk: Arrivals have somewhat improved, but they can scarcely keep pace with the demand, especially for the higher grades; prices for "Angel White" brands are steady at 65s. to 70s., 80s. to 90s., and 100s. to 110s. per ton, according to grade, with an upward tendency. Wolfgram and scheelite: Stocks are *nil*; prices have considerably advanced, and there is a strong inquiry for forward delivery. Ferro-chromium and ferro-tungsten are unaltered. Arsenic is in good demand at full prices, £23. per ton being done for small lots. Fuller's earth is steady at late price, "Emerald" and other brands being done at 50s. for lump, 55s. for ground, and 75s. per ton for impalpable powder. Ochres and umbers remain unaltered, a fair business being done at 60s. for J.C. ochre, and 40s. for prime umber. Pumice stone is in more request, prime Teneriffe being done at £7. 10s., Italian lump at £10. 10s., and ground at £6. 10s. per ton. Keiselguhr meets with a steady sale at last prices. Asbestos and mica are firm at unaltered prices. Bog ore is steady with alteration in price, business being done at 22s. 6d. to 25s. per ton. Magnesite sells slowly, prices being somewhat easier. Plumbago is in fair demand at £6. to £10. per ton for prime founders' and lubricating qualities, prime Ceylon being done at £15. to £20. per ton. Carbonate and sulphate of barytes are quiet. Fluorspar is in quiet demand. Feldspar continues quiet. The inquiry for molybdenite, cerite, euxenite, ytterite, orthite, etc., is quiet.

## LIVERPOOL OIL AND COLOUR MARKET.

WEDNESDAY.

OILS.—Palm oil is inactive, and there is very little business to report. Prices, though unchanged, are nominal. Olive is in good request, and in consequence holders are very firm at their recent values. Linseed is quiet and featureless, quotations for Liverpool makes in export casks being 19s. 6d. to 20s. 6d. per cwt. Cottonseed is steady, and shows no signs of changing; prices are 16s. 6d. to 17s. 3d. per cwt. for Liverpool refined in export barrels, and 17s. per cwt. for American. Castor oil is rather feeble; sellers, however, are asking 2½d. to 2⅞d. for good seconds Calcutta, and 2¼d. to 2⅝d. per lb. for first pressure French. There is nothing to report in tallow. Resin is firm, but the inquiry is flagging somewhat, both for common and higher grades. Spirits of turpentine are steady, sellers being firm at 22s. 3d. to 22s. 6d. per cwt. Petroleum quiet, and sales indifferent: American stands at 6¼d. to 7½d., and Russian refined 5¾d. per gallon.

## THE METAL MARKETS.

LONDON, WEDNESDAY.—Pig iron, firmer: Scotch warrants closed at 46s. 10d.; Middlesbrough, 37s. 8d. cash, and hematite, 47s. 8d. Copper, steady: Chili bars, G. O. B.'s and G. M. B.'s, closed at £46. 11s. 3d. to £46. 16s. 3d. cash, and £46. 17s. 6d. to £47. 2s. 6d. three months. Tin, quiet: Straits closed at £60. 7s. 6d. to £60. 17s. 6d. cash, and £61. to £61. 10s. three months; Australian, £61. 7s. 6d. English ingots, £64. Lead, steady: Spanish, £11. 1s. 3d. to £11. 2s. 6d.; English, £11. 3s. 9d. to £11. 5s.; Silesian spelter, ordinary, £17. 10s. to £17. 12s. 6d. Nickel, 1s. 2½d. Antimony, £30. to £30. 10s. Quicksilver: First hands, £6. 15s.; second hands, £6. 14s. Copper shares, steady: Cape, 2⅞ to 2⅞; Copiapo, 2⅞ to 2⅞; Libiola, 2⅞ to 3; Mason and Barry, 3 to 3¼; Rio Tinto, 21⅞ to 21⅞; Tharsis, 5¼ to 5½.

GLASGOW, WEDNESDAY.—Market again strong, with good business. Scotch done at 46s. 6½d. and 46s. 10d. cash, also at 46s. 8½d. and 47s. one month; closing with buyers at 46s. 6d. cash, sellers ask 46s. 10½d. Cleveland done at 37s. 5d. and 37s. 8d. cash; closing with buyers at 37s. 8d. cash, sellers ask 37s. 9d. Cumberland hematite done at 47s. 8d. and 47s. 7½d. cash, also at 47s. 11½d. and 47s. 10½d. one month; closing with buyers at 47s. 8d. cash, sellers ask 47s. 8½d. Middlesbrough hematite done at 45s. 6d. one month; closing with buyers at 45s. 3½d. cash. Market closed till Tuesday.

## REPORT ON MANURE MATERIAL.

The market has been quiet throughout the week, but without much change in values. Mineral phosphates offer freely, easy freights being obtainable, and buyers having for a long time held back. Large sales of 75/80% Florida rock have been made for the Continent at free on board prices, and business has also been done on c.i.f. terms. The quotations are 6¼d. to the Baltic and 6d. to North Sea ports, and 5¼d. per unit would probably be business to good United Kingdom ports. There are sellers of South Carolina at 5¼d. per unit to United Kingdom. The quotations for Algerian are 5¼d. for 58/63%, and 5½d. for 63/70%. No sales of River Plate bones are reported, but £3. 12s. 6d. would probably do for cargoes afloat. £3. 17s. 6d. asked for fine crushed Kurrachee bones on quay at Liverpool. Bombay bone meal may be had at £3. 12s. 6d. to £3. 15s. per ton, according to quality, and for shipment £3. 10s. is nearest value. Nitrate of soda is quiet, demand, owing to continued dry weather, having fallen off: On spot ordinary quality may be had at 7s. 10½d. per cwt., and fine quality at 8s. Arrived cargoes, ordinary quality, have been done at 7s. 10d. per cwt. Autumn shipments are worth 8s. 3d. to 8s. 4½d. per cwt., according to position.

## WEST OF SCOTLAND CHEMICALS.

GLASGOW, TUESDAY.

The feeling in the market for general chemicals is perhaps a shade healthier, as compared with the past few weeks, but at the best it is unsatisfactory from the producers point of view. There are no changes of price in any of the standard chemicals, and hardly any amongst the other sorts. Sulphate of copper, however, continues to harden, and is now fetching £19. The export section of the chemical trade remains unsatisfactory, and the inland department, though slack enough, compares favourably with it. Sulphate of ammonia has further given way, and since last week £7. 17s. 6d. has been accepted, although not all the makers are willing to take this, some of them standing out for £7. 18s. 9d. In mineral oils and solid paraffins there is no change, things being rather quiet. Lubricants are the best of this lot, steadily holding to the prices as recently improved.

Chief prices current are:—Soda crystals, £2. 2s. 6d., nett, Tyne; soda ash, 48/56°, £4. to £4. 15s. nett, Tyne; white alkali, 48/52°, £4. 10s. to £5. nett, Tyne; alum in lump, £5. to £5. 5s. nett, Glasgow; caustic soda, white, 74° £8. 7s. 6d., 70/72° £7. 7s. 6d., 60/62° £6. 7s. 6d., and cream 60/62° £6. 7s. 6d., all nett, Liverpool; bleaching powder, £7. nett, Tyne; saltcake, 23s. 6d.; borax, English, refined, £20., and boracic acid, £30. nett, Glasgow; bicarbonate of soda, 5-cwt. casks, £6. 10s., and 1-cwt. casks £6. 15s. nett, Liverpool; bichromate of potash, 4½d. nett, for Scotch and English deliveries (for export, 4¼d. nett, f.o.b. Glasgow); bichromate of soda, 3¼d. nett, for Scotch and English deliveries (for export, 3½d. nett, f.o.b. Glasgow); chlorate of potash, 5d. less 5%, Liverpool; nitrate of soda, 8s. to 8s. 3d.; sulphate of ammonia, £7. 17s. 6d. to £7. 18s. 9d., f.o.b. Leith; salammiac, first and second white, £39. and £37. nett, any port; sulphate of copper, £19. less 5%, Liverpool; paraffin scale, hard, 1½d. to 1¾d., and soft, 1¾d. to 2d. per lb.; paraffin wax, 120° semi-refined, 2⅞d. to 2¼d. per lb.; paraffin spirit (naphtha), 7d. per gallon; paraffin oil (burning) No. 1, 6d., and crystal, 6¼d., at works, for Scotch buyers (English sales about ½d. lower); ditto (lubri-



5° 45', 885° 45. 10s. to 46., and 890/895° 46. to 46. 10s. Imports of sugar at Greenock were 51,212 bags jaggery unrefined, 16,065 bags beet unrefined.

## L PAINT, OIL, AND COLOUR REPORT.

TUESDAY.

Manufacturers are somewhat disappointed with the position here, which held out full promise of being an exceptionally good one during the opening months of the year. The imports into date include the following:—Linseed, 265,278 quarters, 05,931 quarters; rapeseed, 33,676 quarters, against 55,879 cottonseed, 80,104 tons, against 84,300 tons; olive oil, 4,736 casks; rape oil, 1,779 casks, against 4,736 casks; oilcakes, 7,493 tons, against 6,515 tons; tallow, 18,960 tons, against 5,171 cwt.; turpentine, 6,221 barrels, against 4,300 barrels.

Linseed oil has declined about 5s. per ton, closing steady at 14s. 7½d., naked; June-August and September-December offer 1½d.; boiled and refined, from 11s. to 12s. per ton extra. The week has been 3,860 cwt. Refined cotton oil steady at 14s. 7½d., naked; May-August deliveries, however, easier, and 14s. 9d., naked, accepted; November-April 15s. 3d. Casks 11s. and ordinary barrels 30s. per ton extra. Turpentine of refined oil has been 7,940 cwt. for the week. Turpentine, live oil unchanged. Castor oil, 2½d. per lb. for first Cod oil from 17s. to 20s. per ton. Boiled siccative oil, 10s. American cottonseed oil soap, 70% fatty acids, is 11s. in barrels. Locomotive grease, 10s. 10s. per ton.

Linseed cakes quiet: 95% pure, 45s. 12s. 6d. to 46s. 12s. 6d.; Russians, 45s. 12s. 6d.; Oilcakes, 44s. 17s. 6d.; Cotton cakes steady: best makes, 43s. 17s. 6d.; 43s. 12s. 6d. Rape cakes unaltered.

Makers continue very busy. Prices are:—White lead, dry; red lead, 14s. 10s. to 15s. dry. Various assorted oil range from 11s. per ton. Ready mixed paints, in tins, Dry mineral colours range from 43s. 10s. to 48s. according to quality.

Paint remover, 11s. 5s. to 11s. 10s. per cwt. Imperial nish, 45s. 10s. per ton. Oak varnish, from 5s. 6d. per

## TYNE CHEMICAL REPORT.

TUESDAY.

Market is without alteration. Shipments continue at about average, but new business is only limited. Sulphur is scarce at 43s. per ton. Soda crystals, 42s. 2s. 6d. per ton, gross weight, Caustic, 76/77%, 49s. 5s. per ton; 70%, 47s. 10s. to 47s. 15s.

ing powder, softs, 47s. per ton, nett; hard, 47s. 5s. per ton, stic soda, 76/77%, 49s. 5s. per ton, nett; do., 70%, 47s. 15s. nett; recovered sulphur, 2 cwt. bags, 43s. 17s. 6d. per ton, nett; 48%, 44s. per ton, nett; do., 50%, 44s. 3s. 4d. per do., 52%, 44s. 6s. 8d. per ton, nett; alkali, 36%, 42s. 15s. nett; white alkali, 48%, 44s. 10s. per ton, nett; do., 50%, per ton, nett; do., 52%, 45s. per ton, nett; hyposulphite of cwt. casks, 46s. 5s. per ton, nett; do., 1 cwt. kegs, 47s. nett; silicate of soda, 75° Tw., 42s. 12s. 6d. per ton, nett; Tw., 43s. per ton, nett; do., 140° Tw., 43s. 7s. 6d. nett; soda crystals, casks, 42s. 2s. 6d. per ton, nett; do., 2 cwt. bags, 42s. 2s. 6d. per ton, nett weight; of potash, 5d. per lb., less 6%; pearl hardening, ton, nett; pure white sulphate of alumina, 43s. 17s. 6d. nett; blanc fixe, 47s. 5s. per ton, nett; chloride of barium, ystals, 46s. 15s., per ton, nett; do., 90/95%, crude calcined, ton, nett; sulphide of barium, crystals, 44s. 15s. per ton, nett; of alumina, 43s. per ton, nett; aluminate of soda, 43s. nett.

South Durham salt steady at 9s. per ton, f.o.b. Tees, demand.

The trade is quiet though steady, and most of the collieries are fairly well employed. Coke is still in good

demand both for inland and export consumption. Best Northumbrian steam, 8s. 3d. to 8s. 6d. per ton; second qualities, 7s. 3d. to 7s. 6d. per ton; small steam 3s. 9d. to 4s. per ton; bunker coals, 6s. 3d. to 6s. 6d.; gas coals, 6s. 6d. to 6s. 9d. per ton; household coals, 10s. per ton; coke firm, 15s. to 15s. 6d. per ton.

## New Companies.

**Nobe's Disinfectants, Ltd.**—CAPITAL £5,000., in shares of £1. each. This company has been formed to manufacture, sell, and deal in disinfectants and chemical compounds.

**Patent Oxide Syndicate, Ltd.**—CAPITAL £4,000., in £1. shares. This company has been formed to manufacture and sell apparatus for carburetted hydrogen gas, and producing metallic sulphates.

**Well-street Oil Works, Ltd.**—CAPITAL £5,000., in £1. shares. This company has been formed to enter into an agreement with W. M. Woollett to take over the oil works at Well-street, and manufacture, sell and deal in soap, oils, paints, and varnishes.

**Anglo-Peninsula Mining and Chemical Co., Ltd.**—CAPITAL £100,000., in shares of £1. each. This company has been formed to acquire lands and mines in Portugal, and to prospect for arsenic and other minerals. The subscribers to the memorandum of association are:—E. H. Williamson, Berkhamstead, Herts, merchant; R. P. Cooper, Berkhamstead, Herts, manufacturer; G. Threlfall, 50, Fenchurch-street, E.C., engineer; S. R. Timson, Berkhamstead, manager; R. A. Cooper, Berkhamstead, manufacturer; C. Pengilly, Scorrer, Cornwall, engineer; G. Neill, 50, Fenchurch-street, E.C., engineer.

**British Oil and Guano Co., Ltd.**—CAPITAL £10,000., in £1. shares. This company has been formed to manufacture, sell, and deal in products from fish, fish offal, and other animal offal. The subscribers to the memorandum of association are:—J. C. Chisholm, Fairfield House, Dalkeith, solicitor and banker; S. Trotter, 21, Dublin-street, Edinburgh, advocate; W. F. King, Russell Place, Trinity, Edinburgh, electrical engineer; W. Cran, Kirkton, Bunchrew, Inverness, manure manufacturer; J. Wilson, Cragdale, Merchison Avenue, Edinburgh, builder; G. Anderson, 10, St. Andrew's Square, Edinburgh, solicitor; W. F. Trotter, M.A., 21, Dublin-street, Edinburgh.

**Lead Oxide Co., Ltd.**—CAPITAL £20,000., in £1. shares. This company has been formed to carry on the business of lead smelters, desilverisers, drysalts, oil and colour manufacturers, and dealers in cements, paints, varnishes, &c. The subscribers to the memorandum of association are:—T. C. Sanderson, 53, Cardiff-road, Norwich, engineer; G. V. Barton, Waltham Buildings, Holborn Circus, merchant; G. P. Wright, 14, Venner-road, Sydenham, clerk; S. C. Pratt, Stanmore, Beulah-Hill, Norwood, retired; C. W. Matthews, 25, Budge-row, E.C., clerk; F. R. W. Sampson, Oakleigh, Godstone, major; B. Saul, 136, Cromwell-road, S.W., merchant.

**American and Foreign Maypole Soap Co., Ltd.**—CAPITAL £25,000., in £1. shares. This company has been formed to acquire certain foreign patents and to carry on the business of soap manufacturers and merchants, and dealers in chemical and other articles for the toilet. The subscribers to the memorandum of Association are:—A. S. Bishop, 1, Florence street, Islington, agent; A. J. Tozer, 10, Queen Victoria-street, E.C., agent; F. G. Marshall, 51, Queen Victoria-street, E.C., merchant; E. J. Chappell, 62, Sotheby-road, Highbury Park, gentleman; A. E. Newton, 6, Bream's Buildings, Chancery-lane, gentleman; H. E. Hughes, 85, Lordship Park, N., merchant; H. P. Griffin, 34, Albany-street, N.W., clerk.

**B. Cannon and Co., Ltd.**—CAPITAL £35,000., in £5. shares. This company has been formed to acquire the business of W. and B. Cannon, at Lincoln, and to trade as leather dressers and manufacturers of glue, gelatine, &c. The subscribers to the memorandum of association are:—Mrs. M. A. Cannon, 71, Monks-road, Lincoln; W. J. Cannon, St. Margaret's Lodge, Lincoln, leather dresser; F. J. Delany, 7, Avondale-street, Lincoln, accountant; T. Scott, 2, Market Place, Hull, merchant; H. Wright, Wellington-road, Bridlington Quay, merchant; J. Ostler, 12, Crown Terrace, Scarborough, merchant; C. Kuypers, Leadenhall House, E.C., merchant.

## IMPORTS OF CHEMICAL PRODUCTS

AT

### THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

#### LONDON.

ending May 9th.

Lead—

10 cks. F. S. Smith

Lead—

130 pks. Little & Johnston

Acetone—

Holland,

Germany,

10

99

2 cks.

12

J. Owen

F. J. Putz & Co.

T. H. Lee

G. Rahn & Co.

R. W. Greiff

& Co.

Holland, 20

Germany,

"

Austria, 16

Hernu, Peron & Co.

to dms. Domeier

& Co.

Thames S.

Tug & L. Co.

"

Alkali—

France,

"

Belgium,

Alum—

Holland,

192 c.

300

228

250 bgs.

Ohlenschlaeger

Brs.

J. Harrison

P. Hecker & Co.

J. Harrison

"

"

"



|                                                                                                                                                                |                                                                                                                                              |                                                                                                                      |                                                                                                                                            |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Aluminium</b> —<br>Holland, 2 c. Davies, Turner & Co.                                                                                                       | <b>Dyestuffs</b> —<br><b>Argols</b><br>Italy, 399 bgs. B. Jacob & Sons<br>France, 2 cks. B. & F. Wf. Co.<br>Italy, 461 Thames S. T. & L. Co. | 1,350 5,800 Bellamy & Co.<br>" 750 250 Trier, Meyer, & Co.<br>" 500 500 W. Balchin<br>" 1,930 5,682 R. G. Hall & Co. | N. Russia, 200 bds. Yiegele, Schmidt, & Co.<br>" 310 "                                                                                     |
| <b>Ammonium Chloride</b> —<br>Holland, 5 cks. H. Lorenz                                                                                                        | <b>Cochineal</b><br>Canaries, 9 bgs. Kuhner, Henderson & Co.<br>" 36 Knowles & Foster                                                        | <b>Glue</b> —<br>" 1,1905<br><b>Infusorial Earth</b> —<br>Germany, 460 T. H. Lee                                     | <b>Rosin</b> —<br>U. States, 1,400 brls. H. Hill & Son<br>" 1,500 T. Nickels & Co.                                                         |
| <b>Antimony</b> —<br>France, 2 c. Girard Frs. & Co.                                                                                                            | <b>Cutch</b><br>Rangoon, 2,220 bxs. Arracan Co., Ltd.<br>" 600 H. A. Litchfield & Co.                                                        | <b>Lamp Black</b> —<br>Sweden, 20 cks. H. & F. Raison                                                                | <b>Salicylic Acid</b> —<br>Germany, 10 pks. T. H. Lee                                                                                      |
| <b>Antimony Ore</b> —<br>Turkey, 30 t. J. Bamber                                                                                                               | <b>Divi Divi</b><br>E. Indies, 209 bgs. Culverwell, Brooks & Co.                                                                             | <b>Lead Acetate</b> —<br>Germany, 15 cks. F. Boehm                                                                   | <b>Saltpetre</b> —<br>E. Indies, 596 bgs. L. & I. D. Jt. Co.<br>Germany, 270 cks. P. Hecker & Co.<br>E. Indies, 1,771 bgs. C. Wimbly & Co. |
| <b>Arsenic</b> —<br>France, 32 cks. H. W. Roberts                                                                                                              | <b>Extractions</b><br>Austria, 67 brls. J. H. Rowntree<br>U. States, 50 Deering & Robottom                                                   | <b>Litharge</b> —<br>Germany, 2 cks. H. Lambert                                                                      | <b>Silica</b> —<br>Germany, 4250 A. Haacke & Co.                                                                                           |
| <b>Asbestos</b> —<br>Italy, 4550 Bender & Martiny<br>Canada, 150 W. Byford<br>N. Russia, 20 M. D. Co.<br>Canaries, 204 Furness, Withy & Co.                    | <b>Germany, 200 bds. J. Knill &amp; Co.</b><br>Natal, 74 t. W. France & Co.                                                                  | <b>Lithopone</b> —<br>Holland, 40 cks. Burrell & Co.                                                                 | <b>Soda</b> —<br>Holland, 2,000 c. R. Wams                                                                                                 |
| <b>Barium Chloride</b> —<br>Holland, 35 cks. S. Devon Wf. Co.                                                                                                  | <b>Germany, 200 bds. J. Knill &amp; Co.</b><br>Natal, 74 t. W. France & Co.                                                                  | <b>Manganese Borate</b> —<br>Germany, 20 kgs. Petri Bros.                                                            | <b>Sodium Hyposulphite</b> —<br>Holland, 98 pks. H. Wallace & Co.                                                                          |
| <b>Barytes</b> —<br>Holland, 66 cks. T. & W. Farmiloe<br>" 160 W. Harrison & Co.<br>Germany, 67 bgs. H. Lambert<br>" 19 J. Kitchin, Ltd.<br>" 21 W. Pope & Co. | <b>Germany, 200 bds. J. Knill &amp; Co.</b><br>Natal, 74 t. W. France & Co.                                                                  | <b>Manure</b> —<br>Brisbane, 50 t. Hopcraft & Broadwater                                                             | <b>Starch</b> —<br>Belgium, 136 cs. F. Claydon & Co.<br>" 130 J. Barber & Co.<br>" 688 T. H. Lee<br>" 82 Leach & Co.                       |
| <b>Bleaching Soda</b> —<br>Germany, 21 c. H. Lambert                                                                                                           | <b>Durban, 64 A. &amp; W. Nesbitt</b><br>Austria, 150 A. J. Humphery                                                                         | <b>Methyl Alcohol</b> —<br>Germany, 10 cks. Tingle, Jacobs, & Co.                                                    | <b>U. States, 500 Little &amp; Johnson</b><br>Germany, 3,970 Bellamy & Co.                                                                 |
| <b>Bone Meal</b> —<br>E. Indies, 100 t. Fox, Roy & Co.                                                                                                         | <b>Germany, 368 bgs. S. Figgis &amp; Co.</b><br>E. Indies, 56 cts. Croysdale & Co.                                                           | <b>U. States, 100 brls. Lister &amp; Biggs</b><br>" 3 dms. J. Whaley<br>" 3 dms. Stein Bros.                         | <b>U. States, 500 Little &amp; Johnson</b><br>Germany, 3,970 Bellamy & Co.                                                                 |
| <b>Boric Acid</b> —<br>Italy, 8 pks. Beresford & Co.                                                                                                           | <b>E. Indies, 56 cts. Croysdale &amp; Co.</b><br>" 31 R. von Glehn & Sons                                                                    | <b>Mica</b> —<br>E. Indies, 468 Ross & Deering<br>Ceylon, 21 D. J. Keymer & Co.                                      | <b>Belgium, 32 T. Ronaldson &amp; Co.</b><br>Germany, 180 Seaward Bros.                                                                    |
| <b>Bromide of Iron</b> —<br>Germany, 15 cks. A. & M. Zimmermann                                                                                                | <b>E. Indies, 56 cts. Croysdale &amp; Co.</b><br>" 31 R. von Glehn & Sons                                                                    | <b>E. Indies, 468 Ross &amp; Deering</b><br>Ceylon, 21 D. J. Keymer & Co.                                            | <b>Holland, 40 G. Rahn &amp; Co.</b><br>" 40 Phillips & Graves<br>" 650 E. & T. Platt                                                      |
| <b>Bromine</b> —<br>Germany, 20 cks. A. & M. Zimmermann                                                                                                        | <b>" 58 Ross &amp; Deering</b><br>" 10 Daring Bros.<br>" 41 Walker, Munroe & Co.                                                             | <b>E. Indies, 468 Ross &amp; Deering</b><br>Ceylon, 21 D. J. Keymer & Co.                                            | <b>Belgium, 650 E. &amp; T. Platt</b><br>" 240 Taylor Bros. & Co.<br>" 900 Sawyer, Sons, & Co.                                             |
| <b>Camphor</b> —<br>Hong Kong, 161 cs. Prop. Hay's Wf. S. Figgis & Co.                                                                                         | <b>E. Indies, 56 cts. Croysdale &amp; Co.</b><br>" 31 R. von Glehn & Sons                                                                    | <b>E. Indies, 468 Ross &amp; Deering</b><br>Ceylon, 21 D. J. Keymer & Co.                                            | <b>N. Zealand, 3 L. &amp; I. D. Jt. Co.</b><br>Austria, 50 bgs. R. G. Hall & Co.                                                           |
| <b>Caoutchouc</b> —<br>E. Indies, 1 c. Wallace Bros.<br>Rangoon, 350 L. & I. D. Jt. Co.                                                                        | <b>E. Indies, 56 cts. Croysdale &amp; Co.</b><br>" 31 R. von Glehn & Sons                                                                    | <b>E. Indies, 468 Ross &amp; Deering</b><br>Ceylon, 21 D. J. Keymer & Co.                                            | <b>France, 146 bgs. Beresford &amp; Co.</b><br>" 130 cks. Walbaum & Toetti                                                                 |
| <b>Carbonic Acid</b> —<br>Germany, 50 pks. Krayer, Back & Co.                                                                                                  | <b>E. Indies, 56 cts. Croysdale &amp; Co.</b><br>" 31 R. von Glehn & Sons                                                                    | <b>E. Indies, 468 Ross &amp; Deering</b><br>Ceylon, 21 D. J. Keymer & Co.                                            | <b>Belgium, 38 bgs. H. Hill &amp; Sons</b>                                                                                                 |
| <b>Castor Oil</b> —<br>E. Indies, 45 cks. Ross & Deering<br>Belgium, 30 brls. Burrell & Co.                                                                    | <b>E. Indies, 56 cts. Croysdale &amp; Co.</b><br>" 31 R. von Glehn & Sons                                                                    | <b>E. Indies, 468 Ross &amp; Deering</b><br>Ceylon, 21 D. J. Keymer & Co.                                            | <b>Italy, 53 Sawyer, Sons, &amp; Co.</b><br>" 300 Brandram Bros. & Co.                                                                     |
| <b>Caustic Potash</b> —<br>France, 16 drs. Petri Bros.                                                                                                         | <b>E. Indies, 56 cts. Croysdale &amp; Co.</b><br>" 31 R. von Glehn & Sons                                                                    | <b>E. Indies, 468 Ross &amp; Deering</b><br>Ceylon, 21 D. J. Keymer & Co.                                            | <b>Germany, 100 brls. W. Beard &amp; Son</b>                                                                                               |
| <b>Chemicals (otherwise under)</b> —<br>Germany, 418 F. Boehm<br>Belgium, 130 T. Palmer                                                                        | <b>E. Indies, 56 cts. Croysdale &amp; Co.</b><br>" 31 R. von Glehn & Sons                                                                    | <b>E. Indies, 468 Ross &amp; Deering</b><br>Ceylon, 21 D. J. Keymer & Co.                                            | <b>France, 5 pks. J. Puddy &amp; Co.</b><br>" 4 F. C. Devon & Co.                                                                          |
| <b>French Chalk</b> —<br>Italy, 440 C. F. Gerhardt                                                                                                             | <b>E. Indies, 56 cts. Croysdale &amp; Co.</b><br>" 31 R. von Glehn & Sons                                                                    | <b>E. Indies, 468 Ross &amp; Deering</b><br>Ceylon, 21 D. J. Keymer & Co.                                            | <b>" 4 B. &amp; F. Wf. Co.</b><br>" 4 H. Lorenz                                                                                            |
| <b>Germany, 668 Zimmermann</b><br>Holland, 10 Jensen & Nicholls<br>Germany, 5 H. Lambert                                                                       | <b>E. Indies, 56 cts. Croysdale &amp; Co.</b><br>" 31 R. von Glehn & Sons                                                                    | <b>E. Indies, 468 Ross &amp; Deering</b><br>Ceylon, 21 D. J. Keymer & Co.                                            | <b>Holland, 10 F. C. Devon &amp; Co.</b>                                                                                                   |
| <b>Germany, 668 Zimmermann</b><br>Holland, 10 Jensen & Nicholls<br>Germany, 5 H. Lambert                                                                       | <b>E. Indies, 56 cts. Croysdale &amp; Co.</b><br>" 31 R. von Glehn & Sons                                                                    | <b>E. Indies, 468 Ross &amp; Deering</b><br>Ceylon, 21 D. J. Keymer & Co.                                            | <b>Germany, 100 brls. W. Beard &amp; Son</b>                                                                                               |
| <b>Germany, 668 Zimmermann</b><br>Holland, 10 Jensen & Nicholls<br>Germany, 5 H. Lambert                                                                       | <b>E. Indies, 56 cts. Croysdale &amp; Co.</b><br>" 31 R. von Glehn & Sons                                                                    | <b>E. Indies, 468 Ross &amp; Deering</b><br>Ceylon, 21 D. J. Keymer & Co.                                            | <b>U. States, 82 Pinchin, Johnson, &amp; Co.</b><br>Belgium, 5 Stobbs, Wilson, & Co.                                                       |
| <b>Germany, 668 Zimmermann</b><br>Holland, 10 Jensen & Nicholls<br>Germany, 5 H. Lambert                                                                       | <b>E. Indies, 56 cts. Croysdale &amp; Co.</b><br>" 31 R. von Glehn & Sons                                                                    | <b>E. Indies, 468 Ross &amp; Deering</b><br>Ceylon, 21 D. J. Keymer & Co.                                            | <b>Germany, 100 brls. W. Beard &amp; Son</b>                                                                                               |
| <b>Germany, 668 Zimmermann</b><br>Holland, 10 Jensen & Nicholls<br>Germany, 5 H. Lambert                                                                       | <b>E. Indies, 56 cts. Croysdale &amp; Co.</b><br>" 31 R. von Glehn & Sons                                                                    | <b>E. Indies, 468 Ross &amp; Deering</b><br>Ceylon, 21 D. J. Keymer & Co.                                            | <b>U. States, 82 Pinchin, Johnson, &amp; Co.</b><br>Belgium, 5 Stobbs, Wilson, & Co.                                                       |
| <b>Germany, 668 Zimmermann</b><br>Holland, 10 Jensen & Nicholls<br>Germany, 5 H. Lambert                                                                       | <b>E. Indies, 56 cts. Croysdale &amp; Co.</b><br>" 31 R. von Glehn & Sons                                                                    | <b>E. Indies, 468 Ross &amp; Deering</b><br>Ceylon, 21 D. J. Keymer & Co.                                            | <b>Germany, 100 brls. W. Beard &amp; Son</b>                                                                                               |
| <b>Germany, 668 Zimmermann</b><br>Holland, 10 Jensen & Nicholls<br>Germany, 5 H. Lambert                                                                       | <b>E. Indies, 56 cts. Croysdale &amp; Co.</b><br>" 31 R. von Glehn & Sons                                                                    | <b>E. Indies, 468 Ross &amp; Deering</b><br>Ceylon, 21 D. J. Keymer & Co.                                            | <b>U. States, 82 Pinchin, Johnson, &amp; Co.</b><br>Belgium, 5 Stobbs, Wilson, & Co.                                                       |
| <b>Germany, 668 Zimmermann</b><br>Holland, 10 Jensen & Nicholls<br>Germany, 5 H. Lambert                                                                       | <b>E. Indies, 56 cts. Croysdale &amp; Co.</b><br>" 31 R. von Glehn & Sons                                                                    | <b>E. Indies, 468 Ross &amp; Deering</b><br>Ceylon, 21 D. J. Keymer & Co.                                            | <b>Germany, 100 brls. W. Beard &amp; Son</b>                                                                                               |
| <b>Germany, 668 Zimmermann</b><br>Holland, 10 Jensen & Nicholls<br>Germany, 5 H. Lambert                                                                       | <b>E. Indies, 56 cts. Croysdale &amp; Co.</b><br>" 31 R. von Glehn & Sons                                                                    | <b>E. Indies, 468 Ross &amp; Deering</b><br>Ceylon, 21 D. J. Keymer & Co.                                            | <b>U. States, 82 Pinchin, Johnson, &amp; Co.</b><br>Belgium, 5 Stobbs, Wilson, & Co.                                                       |
| <b>Germany, 668 Zimmermann</b><br>Holland, 10 Jensen & Nicholls<br>Germany, 5 H. Lambert                                                                       | <b>E. Indies, 56 cts. Croysdale &amp; Co.</b><br>" 31 R. von Glehn & Sons                                                                    | <b>E. Indies, 468 Ross &amp; Deering</b><br>Ceylon, 21 D. J. Keymer & Co.                                            | <b>Germany, 100 brls. W. Beard &amp; Son</b>                                                                                               |
| <b>Germany, 668 Zimmermann</b><br>Holland, 10 Jensen & Nicholls<br>Germany, 5 H. Lambert                                                                       | <b>E. Indies, 56 cts. Croysdale &amp; Co.</b><br>" 31 R. von Glehn & Sons                                                                    | <b>E. Indies, 468 Ross &amp; Deering</b><br>Ceylon, 21 D. J. Keymer & Co.                                            | <b>U. States, 82 Pinchin, Johnson, &amp; Co.</b><br>Belgium, 5 Stobbs, Wilson, & Co.                                                       |
| <b>Germany, 668 Zimmermann</b><br>Holland, 10 Jensen & Nicholls<br>Germany, 5 H. Lambert                                                                       | <b>E. Indies, 56 cts. Croysdale &amp; Co.</b><br>" 31 R. von Glehn & Sons                                                                    | <b>E. Indies, 468 Ross &amp; Deering</b><br>Ceylon, 21 D. J. Keymer & Co.                                            | <b>Germany, 100 brls. W. Beard &amp; Son</b>                                                                                               |
| <b>Germany, 668 Zimmermann</b><br>Holland, 10 Jensen & Nicholls<br>Germany, 5 H. Lambert                                                                       | <b>E. Indies, 56 cts. Croysdale &amp; Co.</b><br>" 31 R. von Glehn & Sons                                                                    | <b>E. Indies, 468 Ross &amp; Deering</b><br>Ceylon, 21 D. J. Keymer & Co.                                            | <b>U. States, 82 Pinchin, Johnson, &amp; Co.</b><br>Belgium, 5 Stobbs, Wilson, & Co.                                                       |
| <b>Germany, 668 Zimmermann</b><br>Holland, 10 Jensen & Nicholls<br>Germany, 5 H. Lambert                                                                       | <b>E. Indies, 56 cts. Croysdale &amp; Co.</b><br>" 31 R. von Glehn & Sons                                                                    | <b>E. Indies, 468 Ross &amp; Deering</b><br>Ceylon, 21 D. J. Keymer & Co.                                            | <b>Germany, 100 brls. W. Beard &amp; Son</b>                                                                                               |



**LIVERPOOL.**

*Week ending May 7th.*

|                            |             |                         |
|----------------------------|-------------|-------------------------|
| <b>Acid—</b>               |             |                         |
| rdam,                      | 200 cs.     |                         |
| en—                        | 20 cs.      | Kenyon & Co.            |
| ony—                       |             |                         |
| raiso,                     | 300 sks.    |                         |
| os—                        |             |                         |
| nd,                        | 20 bgs.     |                         |
| 1 c.                       |             |                         |
| es—                        |             |                         |
| rp,                        | 70 bgs.     |                         |
| ash—                       |             |                         |
| res,                       | 1,147 bgs.  |                         |
| ic Acid—                   |             |                         |
| on,                        | 23 brls.    |                         |
| raiso,                     | 272 sks.    | A. & S. Henry & Co.     |
| 993                        |             |                         |
| <b>Ore—</b>                |             |                         |
| elphia,                    | 10 brls.    |                         |
| <b>Acid—</b>               |             |                         |
| sa,                        | 4 cks.      |                         |
| 8—                         |             |                         |
| diam,                      | 23 cks.     |                         |
| <b>Seed Oil—</b>           |             |                         |
| ears,                      | 2,406 brls. |                         |
| <b>of Tartar—</b>          |             |                         |
| 5 cks.                     |             | Sachse & Klemm          |
| <b>ffa—</b>                |             |                         |
| tic                        |             |                         |
| co,                        | 7,934 ps.   | W. H. Thompson & Co.    |
| <b>wood</b>                |             |                         |
| ing,                       | 3,419 ps.   |                         |
| <b>ron</b>                 |             |                         |
| sa,                        | 1 cs.       |                         |
| <b>mac</b>                 |             |                         |
| so,                        | 950 bgs.    | J. Kitchen, Ld.         |
| 50                         |             |                         |
| 282 bgs.                   |             | Barff & Co., Barry Brs. |
| 50 t.                      |             |                         |
| 100 bgs.                   |             | W. Jackson              |
| 130                        |             |                         |
| 50 brls.                   |             |                         |
| 250                        |             | T. M. Duche & Sons      |
| 97                         |             |                         |
| 100                        |             |                         |
| 26 brls.                   |             | 200 bgs. 9 baks.        |
| <b>Black—</b>              |             |                         |
| uburg,                     | 25 cs.      |                         |
| <b>acetate—</b>            |             |                         |
| arg,                       | 38 cks.     |                         |
| <b>one—</b>                |             |                         |
| 1 cs. 3 crts               |             | J. T. Fletcher & Co.    |
| 4 bls.                     |             |                         |
| 6 cks.                     |             |                         |
| <b>one and White Lead—</b> |             |                         |
| dam,                       | 40 cks.     |                         |
| 1 cs.                      |             | Bennion & Kelly         |
| 10                         |             | Leech & Co.             |
| <b>n Scale—</b>            |             |                         |
| lphia,                     | 75 brls.    |                         |
| ore,                       | 100         |                         |
| ork,                       | 450         | Thompson & Bedford      |
| <b>um Carbonate—</b>       |             |                         |
| 42 cks.                    |             |                         |
| 7,630 t.                   |             | Matheson & Co.          |
| 1,000 brls.                |             |                         |
| 1,173                      |             |                         |
| ork,                       | 1,350       |                         |
| <b>re—</b>                 |             |                         |
| rg,                        | 112 brls.   |                         |
| 1 cs.                      |             |                         |
| 9                          |             | H. Varbetian & Co.      |
| ork,                       | 10 brls.    | Hatton & Cookson        |
| 210 cs.                    |             | J. T. Fletcher & Co.    |

|                    |                     |                      |
|--------------------|---------------------|----------------------|
| Hamburg,           | 100                 |                      |
| Philadelphia,      | 124                 |                      |
| 1,200 sks.         |                     |                      |
| <b>Stearine—</b>   |                     |                      |
| Antwerp,           | 13 bgs.             | J. T. Stearine & Co. |
| Portland,          | 1 pail              |                      |
| <b>Sulphur—</b>    |                     |                      |
| Catania,           | 100 bgs.            |                      |
| <b>Tallow—</b>     |                     |                      |
| Philadelphia,      | 420 tcs.            |                      |
| Baltimore,         | 480                 |                      |
| Boston,            | 83 hds.             |                      |
| Portland,          | 1 bx.               |                      |
| B. Ayres,          | 425 ps 234 hf.-pps. |                      |
| New York,          | 150                 |                      |
| <b>Tartar—</b>     |                     |                      |
| Naples,            | 2 cks.              |                      |
| Bordeaux,          | 18                  |                      |
| <b>Treacle—</b>    |                     |                      |
| Philadelphia,      | 25 brls.            |                      |
| Boston,            | 1 cs.               |                      |
| <b>Varnish—</b>    |                     |                      |
| Antwerp,           | 1 kg. 1 cs.         |                      |
| <b>Waste Salt—</b> |                     |                      |
| Hamburg,           | 279 cks.            | H. Tyrer & Co.       |
| <b>White Lead—</b> |                     |                      |
| Rotterdam,         | 19 cks.             |                      |
| <b>Wood Pulp—</b>  |                     |                      |
| Rotterdam,         | 122 bls.            |                      |
| Kragero,           | 4,701               | H. Tyrer & Co.       |
| 1,600              |                     | A. Wertheim & Co.    |
| <b>Zinc Oxide—</b> |                     |                      |
| Antwerp,           | 35 brls.            |                      |
| Rotterdam,         | 25 cks.             | J. Mathews & Co.     |
| <b>Zinc White—</b> |                     |                      |
| Hamburg,           | 81 cks.             |                      |

**MANCHESTER.**

*Week ending May 9th.*

|                                          |                         |                              |
|------------------------------------------|-------------------------|------------------------------|
| <b>Acetic Acid—</b>                      |                         |                              |
| Rotterdam,                               | 35 blus.                |                              |
| <b>Ammonium Chloride—</b>                |                         |                              |
| Rotterdam,                               | 5 cks.                  |                              |
| <b>Antimony Salt—</b>                    |                         |                              |
| Rotterdam,                               | 1 ck.                   |                              |
| <b>Asbestos—</b>                         |                         |                              |
| Rotterdam,                               | 1 ble.                  |                              |
| <b>Barium Chlorate—</b>                  |                         |                              |
| Rotterdam,                               | 3 cks.                  |                              |
| <b>Barytes—</b>                          |                         |                              |
| Rotterdam,                               | 40 bgs.                 |                              |
| <b>Borax—</b>                            |                         |                              |
| Galveston,                               | 349 t.                  |                              |
| <b>Carbolic Acid—</b>                    |                         |                              |
| Rotterdam,                               | 25 cks.                 |                              |
| <b>Chemicals (otherwise undescribed)</b> |                         |                              |
| Rouen,                                   | 22 cks.                 |                              |
| Rotterdam,                               | 17                      |                              |
| <b>Colours—</b>                          |                         |                              |
| Rotterdam,                               | 14 cks. 23 cs. 91 brls. |                              |
| 26 bxs.                                  |                         |                              |
| Hamburg,                                 | 7                       | 1                            |
| Ghent,                                   |                         | 2                            |
| Antwerp,                                 |                         | 5                            |
| Paris,                                   | 2                       |                              |
| <b>Dyestuffs—</b>                        |                         |                              |
| Alizarine                                |                         |                              |
| Rotterdam,                               | 61 cks. 2 cs.           |                              |
| <b>Extracts</b>                          |                         |                              |
| Antwerp,                                 | 5 brls.                 |                              |
| Treport,                                 | 69 cks.                 |                              |
| <b>Farina—</b>                           |                         |                              |
| Rotterdam,                               | 500 bgs.                |                              |
| Stettin,                                 |                         | 755 sks.                     |
| Hamburg,                                 | 196                     |                              |
| <b>Glucose—</b>                          |                         |                              |
| Rotterdam,                               | 10 kgs.                 |                              |
| <b>Glue—</b>                             |                         |                              |
| Rotterdam,                               | 160 bgs.                |                              |
| Stettin,                                 | 100                     |                              |
| Rouen,                                   | 75 bls.                 | 65 cks.                      |
| Hamburg,                                 | 124                     | 6                            |
| Antwerp,                                 | 20                      |                              |
| Treport,                                 |                         | 3                            |
| <b>Lead Acetate—</b>                     |                         |                              |
| Stettin,                                 | 14 cks.                 |                              |
| <b>Mineral White—</b>                    |                         |                              |
| Bordeaux,                                | 100 bgs.                | G. G. Blackwell, Sons, & Co. |
| <b>Naphthol—</b>                         |                         |                              |
| Rotterdam,                               | 4 cks.                  |                              |

|                        |             |    |
|------------------------|-------------|----|
| <b>Ochre—</b>          |             |    |
| Calais,                | 20 cks.     |    |
| Treport,               | 20          |    |
| <b>Phosphates—</b>     |             |    |
| Ghent,                 | 1,000 bgs.  |    |
| <b>Pitch—</b>          |             |    |
| Marseilles,            | 100 cks.    |    |
| <b>Potash—</b>         |             |    |
| Hamburg,               | 17 cks.     |    |
| Antwerp,               | 20 dms.     |    |
| Treport,               | 153         | 21 |
| <b>Pyrites—</b>        |             |    |
| Huelva,                | 1,199 t.    |    |
| <b>Salt—</b>           |             |    |
| Antwerp,               | 8 cks.      |    |
| <b>Soap—</b>           |             |    |
| Rotterdam,             | 4 cs.       |    |
| Treport,               | 4 cks.      |    |
| Marseilles,            | 8           |    |
| <b>Sodium—</b>         |             |    |
| Hamburg,               | 5 cs.       |    |
| <b>Sodium Nitrate—</b> |             |    |
| Rotterdam,             | 14 cks.     |    |
| <b>Starch—</b>         |             |    |
| Rotterdam,             | 70 cs.      |    |
| Hamburg,               | 160         |    |
| Antwerp,               | 236         |    |
| <b>Tar—</b>            |             |    |
| Rotterdam,             | 286 slbs.   |    |
| <b>Tartaric Acid—</b>  |             |    |
| Rotterdam,             | 12 cks.     |    |
| <b>White Lead—</b>     |             |    |
| Rotterdam,             | 10 cks.     |    |
| <b>Wood Pulp—</b>      |             |    |
| Hamburg,               | 400 pks.    |    |
| Gefle,                 | 11,658 bls. |    |
| <b>Zinc Oxide—</b>     |             |    |
| Rotterdam,             | 25 brls.    |    |
| <b>Zinc White—</b>     |             |    |
| Rotterdam,             | 10 cks.     |    |

**HULL.**

*Week ending May 9th.*

|                                          |                 |                                  |
|------------------------------------------|-----------------|----------------------------------|
| <b>Acetic Acid—</b>                      |                 |                                  |
| Rotterdam,                               | 18 blus.        | Hutchinson & Son                 |
| <b>Acids—</b>                            |                 |                                  |
| Bari,                                    | 42 cks.         | Wilson, Sons, & Co., Ld.         |
| <b>Barytes—</b>                          |                 |                                  |
| Rotterdam,                               | 48 cks.         | Blundell, Spence, & Co.          |
| Antwerp,                                 | 124             | 30 bgs. Bailey & Leatham         |
| <b>Castor Oil—</b>                       |                 |                                  |
| Trieste,                                 | 5 cs.           | Wilson, Sons, & Co., Ld.         |
| <b>Chemicals (otherwise undescribed)</b> |                 |                                  |
| Rotterdam,                               | 4 cks.          | W. & C. L. Ringrose              |
| Dunkirk,                                 | 18              | 60 dms. Wilson, Sons, & Co., Ld. |
| <b>God Oil—</b>                          |                 |                                  |
| Christiansund,                           | 125 brls.       | Wilson, Sons, & Co., Ld.         |
| <b>Colours—</b>                          |                 |                                  |
| Antwerp,                                 | 20 cks. 32 pks. | Wilson, Sons, & Co., Ld.         |
| Danzig,                                  | 11              |                                  |
| Ghent,                                   | 7               |                                  |
| Rotterdam,                               | 30              | 3 cs. W. & C. L. Ringrose        |
| 87 pks.                                  |                 |                                  |
| Hamburg,                                 | 8               |                                  |
| Bremen,                                  | 1               | Veltmann & Co.                   |
| Rotterdam,                               | 14 pks.         | Wilson, Sons, & Co., Ld.         |
| <b>Cream of Tartar—</b>                  |                 |                                  |
| Rotterdam,                               | 2 cks.          | W. & C. L. Ringrose              |
| <b>Dextrine—</b>                         |                 |                                  |
| Stettin,                                 | 50 bgs.         |                                  |
| <b>Dyestuffs—</b>                        |                 |                                  |
| Alizarine                                |                 |                                  |
| Rotterdam,                               | 26 cks. 10 cs.  | W. & C. L. Ringrose              |
| 31 pks.                                  |                 |                                  |
| <b>Fustic</b>                            |                 |                                  |
| Trieste,                                 | 33 bls.         | Wilson, Sons, & Co., Ld.         |
| <b>Shumac</b>                            |                 |                                  |
| Trieste,                                 | 20 bgs. 44 bls. | Wilson, Sons, & Co., Ld.         |
| Palermo,                                 | 905             | 50 bls. "                        |
| 300                                      |                 | 703 pks.                         |
| <b>Farina—</b>                           |                 |                                  |
| Ghent,                                   | 119 pks.        | Wilson, Sons, & Co., Ld.         |
| Stettin,                                 | 100 bgs.        | "                                |
| 200                                      |                 | "                                |
| Harlingen,                               | 800 pks.        | White & Son                      |
| Hamburg,                                 | 50 bgs.         |                                  |
| 50                                       |                 |                                  |
| <b>Glucose—</b>                          |                 |                                  |
| New York,                                | 200 brls.       | Wilson, Sons, & Co., Ld.         |
| Stettin,                                 | 500 bgs.        |                                  |
| <b>Glue—</b>                             |                 |                                  |
| Dunkirk,                                 | 67 cks.         | Wilson, Sons, & Co., Ld.         |
| Antwerp,                                 | 10 bls.         | "                                |
| Fiume,                                   | 19 brls.        |                                  |
| Christiansund,                           | 2               | Wilson, Sons, & Co., Ld.         |
| Antwerp,                                 | 10 cks. 2 bls.  | Bailey & Leatham                 |
| <b>Kaolin—</b>                           |                 |                                  |
| Rotterdam,                               | 239 bgs.        | Reckitt & Sons                   |
| <b>Lime—</b>                             |                 |                                  |
| New York,                                | 276 bgs.        | Wilson, Sons, & Co., Ld.         |
| <b>Limestone—</b>                        |                 |                                  |
| Antwerp,                                 | 2 cs.           | Wilson, Sons, & Co., Ld.         |
| <b>Ochre—</b>                            |                 |                                  |
| Hamburg,                                 | 4 cks.          | Sissons Brs. & Co.               |
| <b>Paint—</b>                            |                 |                                  |
| Christiania,                             | 3 cs.           | Wilson, Sons, & Co., Ld.         |
| <b>Phosphate—</b>                        |                 |                                  |
| Ghent,                                   | 280 t. 800 bgs. | Wilson, Sons, & Co., Ld.         |
| <b>Phosphorus—</b>                       |                 |                                  |
| New York,                                | 10 cs.          | Wilson, Sons, & Co., Ld.         |
| <b>Pitch—</b>                            |                 |                                  |
| Amsterdam,                               | 26 cks.         | W. & C. L. Ringrose              |
| Antwerp,                                 | 1               | H. F. Pudsey                     |
| Rotterdam,                               | 10              | "                                |
| <b>Plumbago—</b>                         |                 |                                  |
| Hamburg,                                 | 39 cks.         | Wilson, Sons, & Co., Ld.         |
| <b>Potash—</b>                           |                 |                                  |
| Antwerp,                                 | 10 dms. 58 pks. | Wilson, Sons, & Co., Ld.         |
| 4                                        |                 | Bailey & Leatham                 |
| <b>Pumice Stone—</b>                     |                 |                                  |
| Messina,                                 | 399 pks.        | Wilson, Sons, & Co., Ld.         |
| 125                                      |                 |                                  |
| <b>Saltpetre—</b>                        |                 |                                  |
| Antwerp,                                 | 135 bgs.        | Wilson, Sons, & Co., Ld.         |
| <b>Soap—</b>                             |                 |                                  |
| Antwerp,                                 | 12 cs.          | Wilson, Sons, & Co., Ld.         |
| New York,                                | 325 pks.        |                                  |
| Bari,                                    | 200 cs.         | "                                |
| Riga,                                    | 17              | "                                |
| <b>Starch—</b>                           |                 |                                  |
| Rotterdam,                               | 100 cs.         | Hutchinson & Son                 |
| Antwerp,                                 | 20              | Wilson, Sons, & Co., Ld.         |
| Amsterdam,                               | 35              | Hutchinson & Son                 |
| Antwerp,                                 | 305             | Bailey & Leatham                 |
| Bremen,                                  | 2,401           | Veltmann & Co.                   |
| <b>Stearine—</b>                         |                 |                                  |
| New York,                                | 20 cks.         | Wilson, Sons, & Co., Ld.         |
| Antwerp,                                 | 125 bgs.        | "                                |
| <b>Sulphur—</b>                          |                 |                                  |
| Catania,                                 | 952 pks.        | Wilson, Sons, & Co., Ld.         |
| 357                                      |                 | 100 t.                           |
| <b>Tar—</b>                              |                 |                                  |
| Stockholm,                               | 10 brls.        | Wilson, Sons, & Co., Ld.         |
| <b>Tartar—</b>                           |                 |                                  |
| Bari,                                    | 4 cks.          | Wilson, Sons, & Co., Ld.         |
| Bordeaux,                                | 2               | Rawson & Robinson                |
| <b>Treacle—</b>                          |                 |                                  |
| New York,                                | 1,125 brls.     | Wilson, Sons, & Co., Ld.         |
| <b>Ultramarine—</b>                      |                 |                                  |
| Rotterdam,                               | 11 cks.         | Hutchinson & Son                 |
| Bremen,                                  | 13 cs.          |                                  |
| 13 cks.                                  |                 |                                  |
| <b>Varnish—</b>                          |                 |                                  |
| New York,                                | 8 pks.          | Wilson, Sons, & Co., Ld.         |
| <b>Vermillion—</b>                       |                 |                                  |
| Bremen,                                  | 1 cs.           | Veltmann & Co.                   |
| <b>Waste Salt—</b>                       |                 |                                  |
| Hamburg,                                 | 102 bgs.        | Wilson, Sons, & Co., Ld.         |
| 307                                      |                 |                                  |



|                    |         |                           |
|--------------------|---------|---------------------------|
| <b>White Lead—</b> |         |                           |
| Rotterdam,         | 19 cks. | W. & C. L. Ringrose       |
| "                  | 9       | J. W. Davis & Son         |
| "                  | 20      | Sissons Bros. & Co.       |
| Ghent,             | 17      | Hutchinson & Son          |
| Amsterdam,         | 13      | Bailey & Leatham          |
| Antwerp,           | 22      |                           |
| <b>Wood Pulp—</b>  |         |                           |
| Helsingfors,       | 76 bls. | J. Good & Sons            |
| "                  | 40      |                           |
| Trieste,           | 1,200   | Wilson, Sons, & Co., Ltd. |
| <b>Zinc White—</b> |         |                           |
| Rotterdam,         | 15 cks. | Johnson Bros.             |

**GLASGOW.**

Week ending May 14th.

|                         |                |                  |
|-------------------------|----------------|------------------|
| <b>Acetate of Lime—</b> |                |                  |
| Philadelphia,           | 650 bgs.       |                  |
| New York,               | 784            |                  |
| <b>Acetic Acid—</b>     |                |                  |
| Rotterdam,              | 8 cks.         | J. Rankine & Son |
| <b>Albumen—</b>         |                |                  |
| Hamburg,                | 5 cks.         |                  |
| <b>Aniline Colours—</b> |                |                  |
| Rotterdam,              | 7 cs. 20 cks.  | J. Rankine & Son |
| <b>Asbestos—</b>        |                |                  |
| Boston,                 | 200 bgs.       |                  |
| Genoa,                  | 28 cs. 29 bls. |                  |
| <b>Barium Chlorate—</b> |                |                  |
| Rotterdam,              | 12 cks.        | J. Rankine & Son |
| <b>Barium Sulphate—</b> |                |                  |
| Antwerp,                | 350 bgs.       |                  |
| <b>Barytes—</b>         |                |                  |
| Rotterdam,              | 64 cks.        | J. Rankine & Son |
| "                       | 41 bgs.        |                  |
| <b>Boracic Acid—</b>    |                |                  |
| Leghorn,                | 5 cks.         |                  |
| <b>Castor Oil—</b>      |                |                  |
| Antwerp,                | 29 cks.        |                  |
| Leghorn,                | 14 cs.         |                  |
| <b>Citric Acid—</b>     |                |                  |
| Messina,                | 4 cks.         |                  |
| <b>Colours—</b>         |                |                  |
| Rotterdam,              | 1 cs. 7 cks.   | J. Rankine & Son |
| Hamburg,                | 3              |                  |
| Rotterdam,              | 61 pks.        |                  |

|                            |                    |                       |
|----------------------------|--------------------|-----------------------|
| <b>Dyestuffs—</b>          |                    |                       |
| <b>Alzarine</b>            |                    |                       |
| Rotterdam,                 | 11 cks.            | J. Rankine & Son      |
| "                          | 49 pks.            |                       |
| <b>Extracts</b>            |                    |                       |
| New York,                  | 132 bxs.           |                       |
| <b>Logwood</b>             |                    |                       |
| Fort Liberte,              | 520 t.             | M'Arthur, Scott & Co. |
| <b>Shumac</b>              |                    |                       |
| Palermo,                   | 60 bls. 1,170 bgs. |                       |
| <b>Farina</b>              |                    |                       |
| Hamburg,                   | 100 bgs.           |                       |
| <b>French Chalk—</b>       |                    |                       |
| Leghorn,                   | 5 cs.              |                       |
| <b>Glucose—</b>            |                    |                       |
| Philadelphia,              | 150 bls.           |                       |
| New York,                  | 400                |                       |
| <b>Glue—</b>               |                    |                       |
| Nantes,                    | 60 bgs.            |                       |
| Genoa,                     | 25 cks.            |                       |
| New York,                  | 96 bls.            |                       |
| <b>Limestone—</b>          |                    |                       |
| Rouen,                     | 1 crt.             |                       |
| <b>Manganese Chlorate—</b> |                    |                       |
| Rotterdam,                 | 4 cks.             | J. Rankine & Son      |
| <b>Manure—</b>             |                    |                       |
| Rouen,                     | 25 cks.            |                       |
| <b>Oxalic Acid—</b>        |                    |                       |
| Rotterdam,                 | 6 cks.             | J. Rankine & Son      |
| <b>Painters' Colours—</b>  |                    |                       |
| Ghent,                     | 2 cks. 1 cs.       |                       |
| <b>Potash—</b>             |                    |                       |
| Rouen,                     | 16 cks.            |                       |
| <b>Pyrites—</b>            |                    |                       |
| Huelva,                    | 1,822 t.           | Tharsis Co.           |
| <b>Rosin—</b>              |                    |                       |
| New York,                  | 994 bls.           |                       |
| Rotterdam,                 | 4 cks.             | J. Rankine & Son      |
| <b>Saltpetre—</b>          |                    |                       |
| Hamburg,                   | 5 cks.             |                       |
| <b>Soap—</b>               |                    |                       |
| Philadelphia,              | 4 cs.              |                       |
| Nantes,                    | 5 cks.             |                       |
| <b>Sodium Nitrate—</b>     |                    |                       |
| Iquique,                   | 2,200 t.           | Alex. Cross & Sons    |
| <b>Starch—</b>             |                    |                       |
| New York,                  | 250 bgs. 250 cks.  |                       |
| <b>Sulphur—</b>            |                    |                       |
| Catania,                   | 1,830 bgs. 67 bls. |                       |

|                       |            |                  |
|-----------------------|------------|------------------|
| <b>Tallow—</b>        |            |                  |
| New York,             | 20 tierces |                  |
| <b>Tartar—</b>        |            |                  |
| Bordeaux,             | 20 cks.    |                  |
| Messina,              | 2          |                  |
| <b>Tartaric Acid—</b> |            |                  |
| Rotterdam,            | 4 cks.     | J. Rankine & Son |
| <b>Ultramarine—</b>   |            |                  |
| Hamburg,              | 40 cs.     |                  |
| <b>Varnish—</b>       |            |                  |
| New York,             | 15 bls.    |                  |
| Antwerp,              | 2 cs.      |                  |
| <b>White Lead—</b>    |            |                  |
| Rotterdam,            | 47 cks.    |                  |
| <b>Wood Pulp—</b>     |            |                  |
| Hamburg,              | 600 bls.   |                  |
| <b>Zinc Oxide—</b>    |            |                  |
| Rotterdam,            | 60 cks.    | J. Rankine & Son |
| New York,             | 50 bls.    |                  |
| Antwerp,              | 25         |                  |

**TYNE.**

Week ending May 9th.

|                          |          |                |
|--------------------------|----------|----------------|
| <b>Barium Carbonate—</b> |          |                |
| Rotterdam,               | 134 bgs. | Tyne S. S. Co. |
| <b>Barium Chlorate—</b>  |          |                |
| Rotterdam,               | 350 bgs. | Tyne S. S. Co. |
| <b>Barytes—</b>          |          |                |
| Rotterdam,               | 24 cks.  | Tyne S. S. Co. |
| Antwerp,                 | 100 bgs. | "              |
| <b>Castor Oil—</b>       |          |                |
| Antwerp,                 | 29 bls.  | Tyne S. S. Co. |
| <b>Cod Oil—</b>          |          |                |
| Bergen,                  | 3 bls.   |                |
| <b>Glue—</b>             |          |                |
| Antwerp,                 | 3 cks.   | Tyne S. S. Co. |
| <b>Limestone—</b>        |          |                |
| Antwerp,                 | 4 cs.    | Tyne S. S. Co. |
| <b>Plumbago—</b>         |          |                |
| Antwerp,                 | 1 ck.    | Tyne S. S. Co. |
| <b>Saltpetre—</b>        |          |                |
| Hamburg,                 | 2 cks.   | Tyne S. S. Co. |
| <b>Sodium—</b>           |          |                |
| Hamburg,                 | 1 cs.    | Tyne S. S. Co. |
| <b>Starch—</b>           |          |                |
| Antwerp,                 | 160 cs.  | Tyne S. S. Co. |
| Rotterdam,               | 148      | "              |
| <b>Sulphide Ore—</b>     |          |                |
| Pt. Adelaide,            | 2,051 t. |                |
| <b>Tartaric Acid—</b>    |          |                |
| Rotterdam,               | 4 cks.   | Tyne S. S. Co. |

|                     |            |         |
|---------------------|------------|---------|
| <b>Ultramarine—</b> |            |         |
| Rotterdam,          | 1 cs.      | Tyne S. |
| <b>Waste Salt—</b>  |            |         |
| Harburg,            | 210 t.     | Clegh   |
| <b>Wood Pulp—</b>   |            |         |
| Holmestrand,        | 1,000 bls. |         |
| <b>Zinc Oxide—</b>  |            |         |
| Antwerp,            | 25 bls.    | Tyne S. |

**GOOLE.**

Week ending May 6th.

|                                      |                 |       |
|--------------------------------------|-----------------|-------|
| <b>Alizarine—</b>                    |                 |       |
| Rotterdam,                           | 72 bls.         |       |
| <b>Antimony—</b>                     |                 |       |
| Boulogne,                            | 1 ck.           |       |
| <b>Caoutchouc—</b>                   |                 |       |
| Boulogne,                            | 8 cks.          |       |
| <b>Chemicals (otherwise undescd)</b> |                 |       |
| Hamburg,                             | 7 cs.           |       |
| <b>Dyestuffs (otherwise undescd)</b> |                 |       |
| Rotterdam,                           | 271 cks. 23 cs. |       |
| Antwerp,                             | 12              | 27    |
| Boulogne,                            | 12              | 27    |
| <b>Lead Acetate—</b>                 |                 |       |
| Hamburg,                             | 29 cks.         |       |
| <b>Logwood—</b>                      |                 |       |
| Campeachy,                           | 506 t.          |       |
| <b>Potash—</b>                       |                 |       |
| Antwerp,                             | 20 dms.         |       |
| Dunkirk,                             | 4               |       |
| <b>Sulphur Ore—</b>                  |                 |       |
| Huelva,                              | 1,402 t.        |       |
| <b>Waste Salt—</b>                   |                 |       |
| Hamburg,                             | 629 cks.        | 1,000 |

**GRIMSBY.**

Week ending May 9th.

|                                      |          |  |
|--------------------------------------|----------|--|
| <b>Barytes—</b>                      |          |  |
| Rotterdam,                           | 134 bgs. |  |
| <b>Caoutchouc—</b>                   |          |  |
| Rotterdam,                           | 2 bls.   |  |
| Hamburg,                             | 16 cs.   |  |
| Antwerp,                             | 3        |  |
| <b>Chemicals (otherwise undescd)</b> |          |  |
| Rotterdam,                           | 26 cks.  |  |
| Hamburg,                             | 2        |  |
| <b>Dyes—</b>                         |          |  |
| Antwerp,                             | 74 pks.  |  |

**EXPORTS OF CHEMICAL PRODUCTS****OF THE PRINCIPAL PORTS OF THE UNITED KINGDOM.****LONDON.**

Week ending May 13th.

|                            |            |      |
|----------------------------|------------|------|
| <b>Acids—</b>              |            |      |
| Canton,                    | 15 cs.     | £43  |
| Demerara,                  | 25         |      |
| Bombay,                    | 5          | 13   |
| Alleppey,                  | 4          | 10   |
| <b>Albumen (Liquid)—</b>   |            |      |
| New York,                  | 5 cks.     | £24  |
| <b>Alkali—</b>             |            |      |
| Rotterdam,                 | 10 t.      | £60  |
| <b>Alum—</b>               |            |      |
| Algoa Bay,                 | 20 cs.     | £3   |
| Rabat,                     | 3 t. 14 c. | 20   |
| <b>Ammonia—</b>            |            |      |
| New York,                  | 27 cks.    | £132 |
| <b>Ammonia (Liquid)—</b>   |            |      |
| B. Ayres,                  | 9 c.       | £28  |
| Bombay,                    | 10 pks.    | 23   |
| <b>Ammonium Carbonate—</b> |            |      |
| B. Ayres,                  | 1 t. 1 c.  | £38  |
| Sydney,                    | 15 cs.     | 28   |
| <b>Ammonium Chlorate—</b>  |            |      |
| Rotterdam,                 | 50 dms.    | £75  |
| <b>Ammonium Chloride—</b>  |            |      |
| Batoum,                    | 2 t.       | £74  |
| Gibraltar,                 | 2 c.       | 5    |
| Sydney,                    | 4          | 48   |
| Samsoun,                   | 5 bls.     | 19   |
| <b>Ammonium Nitrate—</b>   |            |      |
| Hamburg,                   | 1 t. 10 c. | £60  |

|                              |            |       |
|------------------------------|------------|-------|
| <b>Ammonium Sulphate—</b>    |            |       |
| Philadelphia,                | 25 t.      | £215  |
| Antigua,                     | 20         | 180   |
| Hamburg,                     | 151        | 1,208 |
| Pecalangan,                  | 26         | 234   |
| Samarang,                    | 692        | 6,040 |
| Tegal,                       | 32         | 288   |
| <b>Amorphous Phosphorus—</b> |            |       |
| Hong Kong,                   | 2 c.       | £27   |
| <b>Anhydrous Ammonia—</b>    |            |       |
| Cologne,                     | 95 cyldrs. | £200  |
| Colombo,                     | 13         | 58    |
| <b>Arsenic—</b>              |            |       |
| Montreal,                    | 10 c.      | £15   |
| <b>Bisulphite of Lime—</b>   |            |       |
| Calcutta,                    | 3 t. 2 c.  | £46   |
| <b>Borax—</b>                |            |       |
| Bombay,                      | 6 cks.     | £17   |
| <b>Carbolic Acid—</b>        |            |       |
| Hamburg,                     | 8 cks.     | £47   |
| Rotterdam,                   | 42 cs.     | 185   |
| Newport News,                | 32         | 217   |
| Sydney,                      | 30 dms.    | 12    |
| <b>Caustic Potash—</b>       |            |       |
| Napier,                      | 10 c.      | —     |
| <b>Caustic Soda—</b>         |            |       |
| Fremantle,                   | 1 t. 4 c.  | £10   |
| Melbourne,                   | 1 t.       | 32    |
| Cape Town,                   | 2          | 1     |
| Natal,                       | 1          | 18    |
| New York,                    | 7          | 6     |
| Napier,                      | 3          | 93    |
| Auckland,                    | 10         | 6     |
| Hong Kong,                   | 3          | 5     |

|                                      |           |       |     |
|--------------------------------------|-----------|-------|-----|
| Philadelphia,                        | 58        | 1     | 425 |
| Mauritius,                           | 1         | 2     | 13  |
| Sydney,                              | 11        | 7     |     |
| <b>Chemicals (otherwise undescd)</b> |           |       |     |
| Madras,                              | 6 pks.    | 6 cs. | £48 |
| M. Video,                            | 15 cks.   | 21    |     |
| Treport,                             | 5         | 45    |     |
| Copenhagen,                          | 6         | 47    |     |
| Boulogne,                            | 5         | 26    |     |
| Antofagasta,                         | 8         | 13    |     |
| Napier,                              | 12        | 26    |     |
| Hong Kong,                           | 23        | 32    |     |
| Montreal,                            | 6         | 21    |     |
| Amoy,                                | 5 kgs.    | 3     | 88  |
| Bombay,                              | 4 dms.    | 13    |     |
| Rotterdam,                           | 5 t. 4 c. | 66    |     |
| St. John,                            | 4 cs.     | 7     |     |
| <b>Citric Acid—</b>                  |           |       |     |
| Seville,                             | 4 cks.    | £1    |     |
| Corunna,                             | 5 c.      | —     |     |
| Calcutta,                            | 1         | —     |     |
| Wellington,                          | 2 cs.     | —     |     |
| B. Ayres,                            | 2         | 1     |     |
| Hamburg,                             | 15 kgs.   | 138   |     |
| St. Petersburg,                      | 2 t. 10   | —     |     |
| "                                    | 10 kgs.   | 63    |     |
| Limon,                               | 1         | —     |     |
| Ibrail,                              | 1         | —     |     |
| Melbourne,                           | 2         | 12    |     |
| Genoa,                               | 10        | 165   |     |
| Vigo,                                | 5         | 32    |     |
| Stettin,                             | 1         | 15    |     |
| Lisbon,                              | 10 cks.   | 66    |     |
| Gothenburg,                          | 2         | 13    |     |
| Oporto,                              | 11        | 62    |     |
| E. London,                           | 1         | 1     | 14  |

|                        |                 |         |
|------------------------|-----------------|---------|
| <b>Coal Products—</b>  |                 |         |
| <b>Alizarine</b>       |                 |         |
| Lisbon,                | 5 cks. 3 kgs.   |         |
| New York,              | 10              |         |
| <b>Aniline Oil</b>     |                 |         |
| Venice,                | 7 cks.          |         |
| Fiume,                 | 1 dm.           |         |
| Genoa,                 | 14              |         |
| New York,              | 18              |         |
| Rotterdam,             | 3               |         |
| <b>Aniline Salts</b>   |                 |         |
| Genoa,                 | 10 cks.         |         |
| New York,              | 27              |         |
| Rotterdam,             | 5               |         |
| <b>Anthracene</b>      |                 |         |
| Dusseldorf,            | 142 cks.        |         |
| <b>Benzol</b>          |                 |         |
| Amsterdam,             | 34 dms.         |         |
| Rotterdam,             | 50 cks. 13 pss. |         |
| <b>Cresosote</b>       |                 |         |
| Dieppe,                | 23,500 galls.   |         |
| Gibraltar,             | 12 bls.         |         |
| <b>Cresosote Salts</b> |                 |         |
| New York,              | 80 bgs.         |         |
| <b>Naphtha</b>         |                 |         |
| Brussels,              | 25 bls.         |         |
| Le Treport,            | 30              | 61 cks. |
| <b>Naphthaline</b>     |                 |         |
| Hamburg,               | 3 cks.          |         |
| New York,              | 88              |         |
| Le Treport,            | 50 bgs.         |         |
| <b>Pitch</b>           |                 |         |
| Antwerp,               | 650 t.          |         |
| Baltimore,             | 2,217 bgs.      |         |
| Dunkirk,               | 173             |         |
| San Juan Aviles,       | 1,896 t.        |         |
| Natal,                 | 20 kgs.         |         |



|               |           |       |
|---------------|-----------|-------|
| rk,           | 100 cks.  | 66    |
| 1,            | 1,309     | 800   |
| ria,          | 338 t.    | 597   |
| 200 brls.     |           | 73    |
| g,            | 100 brls. | £18   |
| ay,           | 60 dms.   | 33    |
| ong,          | 520       | 19    |
| 15            |           | 14    |
| 10            |           | 11    |
| es,           | 10 cks.   | £13   |
| ay,           | 250       | 140   |
| Sulphate—     |           |       |
| ay,           | 8 c.      | £8    |
| 12 t.         | 10        | 234   |
| 120           |           | 2,207 |
| x,            | 97 10     | 1,810 |
| 11 7          |           | 200   |
| is —          |           |       |
| 5 kgs.        |           | £15   |
| of Tartar—    |           |       |
| mpion,        | 50 kgs.   | £228  |
| tle,          | 2 cs.     | 11    |
| na,           | 10 c.     | 49    |
| me,           | 20        | 10    |
| 1 t.          |           | 95    |
| re,           | 14        | 46    |
| dl,           | 10        | 56    |
| 2             |           | 10    |
| stants—       |           |       |
| rg,           | 50 cks.   | £250  |
| long,         | 25 dms.   | 11    |
| id,           | 7 cs.     | 19    |
| 75            |           | 46    |
| 100 28        |           | 265   |
| flood—        |           |       |
| rk,           | 4 t.      | 17 c. |
| Acid—         |           |       |
| abeth,        | 1 cs.     | £11   |
| les,          | 3 t.      | 15 c. |
| re,           | 2         | 3     |
| la—           |           |       |
| 6 cs.         |           | £38   |
| 2             |           | 6     |
| 1 t.          |           | 31    |
| ra,           | 50 t.     | £414  |
| 20            |           | 175   |
| burg,         | 113       | 4 c.  |
| 4             |           | 33    |
| rg,           | 40        | 82    |
| 20            |           | 165   |
| 3             |           | 15    |
| Acid—         |           |       |
| 30 pks.       |           | £40   |
| aphthaline—   |           |       |
| les,          | 6 cks.    | £65   |
| orus—         |           |       |
| ton,          | 3 c.      | £31   |
| rne,          | 2         | 21    |
| cs,           | 2         | 22    |
| es,           | 50 kgs.   | £40   |
| Crystals—     |           |       |
| 6 cks.        |           | £60   |
| um Chlorate—  |           |       |
| 12 c.         |           | £27   |
| own,          | 40 kgs.   | 79    |
| Kong,         | 1 t.      | 42    |
| es,           | 10        | 21    |
| um Cyanide—   |           |       |
| Bay,          | 3 cs.     | £34   |
| rne,          | 10        | 136   |
| la,           | 2 c.      | 9     |
| um Iodide—    |           |       |
| arg,          | 1 c.      | £31   |
| um Prussiate— |           |       |
| ama,          | 10 c.     | £33   |
| ic Acid—      |           |       |
| own,          | 1 cs.     | £15   |
| tre—          |           |       |
| ra,           | 15 c.     | £12   |
| Bay,          | 9         | 11    |
| urne,         | 3 t.      | 69    |
| tar,          | 5         | 110   |
| urg,          | 11        | 13    |
| Janeiro,      | 2         | 18    |
| Y,            | 2         | 45    |
| 2             |           | 65    |
| 15            |           | 10    |
| res,          | 8         | 97    |
| ama,          | 30        | 259   |
| ampton,       | 1         | 23    |
| Dip—          |           |       |
| Bay,          | 1 cs.     | £8    |
| ta,           | 60 dms.   | 25    |

|                      |          |         |
|----------------------|----------|---------|
| Durban,              | 100 dms. | 22      |
| Sydney,              | 16 t.    | 1 c.    |
| E. London,           | 195 pks. | 563     |
| Natal,               | 16 cs.   | 7       |
| B. Ayres,            | 13 63    | 10      |
| 2,384                |          |         |
| Soda—                |          |         |
| Natal,               | 3 t.     | 5 c.    |
| Soda Crystals—       |          |         |
| Algoa Bay,           | 5 t.     | 8 c.    |
| Hong Kong,           | 2        | 5       |
| B. Ayres,            | 7        | 10      |
| Brussels,            |          | 8       |
| 30                   |          |         |
| Soda Salts—          |          |         |
| New York,            | 8 t.     | 3 c.    |
| £120                 |          |         |
| Sodium—              |          |         |
| New York,            | 7 t.     | 7 c.    |
| £973                 |          |         |
| Sodium Bicarbonate—  |          |         |
| Algoa Bay,           | 16 c.    | £12     |
| Melbourne,           | 1 t.     | 18      |
| Sodium Carbonate—    |          |         |
| Algoa Bay,           | 1 t.     | £13     |
| Mauritius,           | 2        | 10 c.   |
| 13                   |          |         |
| Sodium Hyposulphite— |          |         |
| Philadelphia,        | 10 t.    | £61     |
| Sodium Silicate—     |          |         |
| Cape Town,           | 2 t.     | 4 c.    |
| Auckland,            | 5        | 3       |
| Mauritius,           | 13       | 6       |
| Strontium Nitrate—   |          |         |
| New York,            | 4 t.     | 4 c.    |
| £99                  |          |         |
| Sulphur—             |          |         |
| Bunbury,             | 2 t.     | £11     |
| Sulphuric Acid—      |          |         |
| Penang,              | 22 pks.  | £10     |
| Tartaric Acid—       |          |         |
| Yokohama,            | 1 t.     | £124    |
| Wellington,          | 5 c.     | 33      |
| Melbourne,           |          | 10 kgs. |
| Hamburg,             | 10       | 67      |
| Corunna,             | 4        | 25      |
| B. Ayres,            | 4        | 22      |

## LIVERPOOL.

Week ending May 13th.

|                       |          |        |
|-----------------------|----------|--------|
| Albumen—              |          |        |
| Santos,               | 12 c.    | 1 q.   |
| Boston,               | 5        | 1      |
| New York,             | 2 t.     | 1      |
| 233                   |          |        |
| Alum—                 |          |        |
| Havana,               | 7 t.     | 15 c.  |
| Oporto,               | 5        | 2      |
| £20                   |          |        |
| Aluminous Cake—       |          |        |
| Calcutta,             | 45 t.    | 5 c.   |
| £116                  |          |        |
| Ammonium Carbonate—   |          |        |
| M. Video,             | 1 t.     | 2 c.   |
| 3 q.                  |          | £30    |
| Ceara,                | 6        | 9      |
| Norrkoping,           | 7        | 11     |
| Genoa,                | 2        | 5      |
| Barcelona,            | 1        | 28     |
| Malaga,               | 5        | 7      |
| Ammonium Chloride—    |          |        |
| Montreal,             | 9 c.     | £17    |
| Christiania,          | 8        | 3 q.   |
| Constantinople,       | 1 t.     | 3      |
| Smyrna,               | 1        | 4      |
| Philadelphia,         | 20       | 3      |
| 463                   |          |        |
| Ammonium Sulphate—    |          |        |
| Samarang,             | 391 t.   | 7 c.   |
| 3 q.                  |          | £397   |
| Sourabaya,            | 121      | 11     |
| Teneriffe,            | 10       | 5      |
| 87                    |          |        |
| New York,             | 57       | 1      |
| Boston,               | 2        | 1      |
| San Francisco,        | 30       | 9      |
| Honolulu,             | 50       | 9      |
| 403                   |          |        |
| Messina,              | 4        | 12     |
| Genoa,                | 50       | 12     |
| 410                   |          |        |
| St. John,             | 10       | 10     |
| Palermo,              | 10       | 3      |
| Valencia,             | 25       | 7      |
| Cartagena (Spn.),     | 19       | 7      |
| Castellon,            | 44       | 16     |
| 359                   |          |        |
| Amorphous Phosphorus— |          |        |
| Hiogo,                | 1 t.     | 15 c.  |
| £388                  |          |        |
| Antimony—             |          |        |
| Gijon,                | 4 c.     | 3 q.   |
| £10                   |          |        |
| Arsenic—              |          |        |
| Montreal,             | 10 t.    | 10 c.  |
| £210                  |          |        |
| Bleaching Powder—     |          |        |
| Baltimore,            | 126 cks. |        |
| Boston,               | 628      |        |
| Calcutta,             |          | 60 cs. |
| Corfu,                | 15       |        |
| Dunkirk,              | 18       |        |
| Genoa,                | 120      |        |
| Ghent,                | 63       |        |
| Leghorn,              | 35       |        |
| Montreal,             | 43       |        |

|                                   |                           |                  |
|-----------------------------------|---------------------------|------------------|
| Naples,                           | 67                        |                  |
| Newport News,                     | 42                        |                  |
| New York,                         | 95                        | 50 brls. 30 bxs. |
| Paris,                            | 94                        |                  |
| Vera Cruz,                        | 14                        |                  |
| Boracic Acid—                     |                           |                  |
| Antwerp,                          | 3 t.                      | 18 c.            |
| Hamburg,                          | 19                        | £117             |
| Stockholm,                        | 5                         | 10               |
| 110                               |                           |                  |
| Borax—                            |                           |                  |
| Amsterdam,                        | 2 t.                      | 11 c.            |
| Seville,                          | 13                        | 3 q.             |
| Stettin,                          | 10                        | 1                |
| Hamburg,                          | 5                         | 8                |
| Montreal,                         | 2                         | 11               |
| Stockholm,                        | 1                         | 3                |
| Sydney, N.S.W.,                   | 18                        | 3                |
| Constantinople,                   | 1                         | 20               |
| Barcelona,                        | 4                         | 14               |
| Rosario,                          | 2                         | 9                |
| Gibraltar,                        | 7                         | 7                |
| Melbourne,                        |                           | 45               |
| Ibrail,                           | 1                         | 5                |
| Cologne,                          | 1                         | 1                |
| Rotterdam,                        | 9                         | 11               |
| Christiania,                      | 10                        | 3                |
| Piraeus,                          | 2                         | 1                |
| 2                                 |                           |                  |
| Calcium —                         |                           |                  |
| Hamburg,                          | 2 t.                      | 12 c.            |
| £7                                |                           |                  |
| Carbolic Acid—                    |                           |                  |
| Marseilles,                       | 2 t.                      | 19 c.            |
| Genoa,                            | 2                         | 139              |
| Hong Kong,                        | 1                         | 18               |
| Odessa,                           |                           | 8                |
| Hiogo,                            | 2                         | 10               |
| Dunkirk,                          | 16                        | 1,082            |
| Melbourne,                        | 3                         | 10               |
| Rotterdam,                        | 21                        | 10               |
| Yokohama,                         | 2                         | 10               |
| Hamburg,                          |                           | 4                |
| Leghorn,                          |                           | 9                |
| Lagos,                            | 40 dms.                   | 33               |
| Caustic Potash—                   |                           |                  |
| New York,                         | 10 c.                     | £14              |
| Baltimore,                        | 1 t.                      | 1                |
| 28                                |                           |                  |
| Caustic Soda—                     |                           |                  |
| Adelaide,                         | 100 dms.                  |                  |
| Antwerp,                          | 35                        | 14 bxs.          |
| Bahia,                            | 30                        |                  |
| Baltimore,                        | 200                       | 105              |
| Barcelona,                        | 150                       |                  |
| Bombay,                           | 24                        |                  |
| Boston,                           | 250                       |                  |
| Brisbane,                         | 52                        |                  |
| Calcutta,                         | 20                        |                  |
| Callao,                           | 110                       |                  |
| Cartagena, N.G.,                  | 30                        |                  |
| Corunna,                          |                           | 20 brls.         |
| Corinto,                          | 40                        | 100 kgs.         |
| Dunkirk,                          | 35                        |                  |
| Fairwater,                        | 105                       |                  |
| Fiume,                            | 140                       |                  |
| Galatz,                           | 25                        |                  |
| Genoa,                            | 269                       |                  |
| Hamburg,                          | 265                       |                  |
| Havana,                           | 40                        |                  |
| Ibrail,                           | 50                        |                  |
| Jaffa,                            | 40                        |                  |
| La Guayra,                        | 12                        |                  |
| Leghorn,                          | 71                        |                  |
| Malaga,                           | 131                       | 28               |
| Melbourne,                        | 21                        |                  |
| Montreal,                         | 100                       |                  |
| N. Orleans,                       | 45                        |                  |
| New York,                         | 551 dms. 30 brls. 30 bxs. |                  |
| 15 cs.                            |                           |                  |
| Oporto,                           | 50                        |                  |
| Palermo,                          | 10                        |                  |
| Parí,                             | 52                        |                  |
| Pernambuco,                       | 225                       |                  |
| Philadelphia,                     | 25                        |                  |
| Puerto Cabello,                   | 14                        |                  |
| Quebec,                           | 150 pks. 130              |                  |
| Kiga,                             | 70                        |                  |
| Rangoon,                          | 15                        |                  |
| Rio de Janeiro,                   | 3                         |                  |
| Saltillo,                         | 66                        |                  |
| San Francisco,                    | 100                       |                  |
| Santander,                        | 20                        |                  |
| Seville,                          | 581                       |                  |
| Shanghai,                         | 100                       |                  |
| Sydney,                           | 45                        |                  |
| Tampico,                          | 258                       |                  |
| Valencia,                         | 20                        |                  |
| Valparaiso,                       |                           | 36               |
| Vigo,                             | 15                        |                  |
| Chemicals (otherwise undescribed) |                           |                  |
| Constantinople,                   | 8 c.                      | £18              |
| Christiania,                      | 1 t.                      | 36               |
| Hamburg,                          | 1                         | 10               |
| Oporto,                           |                           | 18               |
| Antwerp,                          | 2                         | 18               |
| Montreal,                         | 12                        | 12               |
| Copenhagen,                       |                           | 22               |

|                     |          |                 |       |
|---------------------|----------|-----------------|-------|
| Beyrout,            | 1        | 5               | 46    |
| Bombay,             | 10       | 13              | 1 q.  |
| 62                  |          |                 |       |
| China Clay—         |          |                 |       |
| Barcelona,          |          | 10 cks.         |       |
| Bombay,             |          | 710             |       |
| Boston,             |          | 1,463           |       |
| M. Video,           | 100      |                 |       |
| Naples,             |          | 20              |       |
| Philadelphia,       |          | 250             |       |
| Rouen,              |          | 40 bgs.         |       |
| Sydney,             |          | 40              |       |
| Citric Acid—        |          |                 |       |
| Bombay,             |          | c.              | £7    |
| M. Video,           |          | 4               | 3 q.  |
| 27                  |          |                 |       |
| Coal Products—      |          |                 |       |
| Aniline Dyes        |          |                 |       |
| Shanghai,           | 100 cs.  |                 |       |
| Aniline Salts       |          |                 |       |
| Barcelona,          | 20 cks.  |                 |       |
| New York,           | 45       | 2 brls          |       |
| Anthracene          |          |                 |       |
| Rotterdam,          | 58 cks.  |                 |       |
| Naphtha             |          |                 |       |
| Trinidad,           | 1 ck.    |                 |       |
| Pitch               |          |                 |       |
| Boston,             | 78 cks.  |                 |       |
| Malta,              |          | 100             |       |
| Penang              | 119      |                 |       |
| Tar                 |          |                 |       |
| Charlotte Town,     | 10 brls. |                 |       |
| Galatz,             | 30       |                 |       |
| Old Calabar,        |          |                 |       |
| Philadelphia,       | 150      |                 |       |
| Sourabaya,          | 50       |                 |       |
| Cobalt Oxide—       |          |                 |       |
| Gijon,              | 1 cs.    |                 | £10   |
| Copper Sulphate—    |          |                 |       |
| Trieste,            | 4 t.     | 3 c.            | 3 q.  |
| Ibrail,             |          |                 | £70   |
| Algoa Bay,          |          | 6               | 3     |
| Messina,            |          | 19              | 2     |
| Rouen,              | 15       | 1               | 1     |
| Santos,             |          | 10              | 3     |
| Barcelona,          |          | 9               | 16    |
| Tarragona,          |          | 4               | 161   |
| Genoa,              | 246      | 19              | 4,242 |
| Ancona,             |          | 5               | 82    |
| Palermo,            |          | 2               | 38    |
| Oporto,             |          | 55              | 11    |
| La Pallice,         |          | 4               | 18    |
| Leghorn,            | 101      | 17              | 3     |
| Cette,              | 390      | 6               | 1,703 |
| Algiers,            | 43       | 7               | 1,023 |
| Marseilles,         | 94       | 8               | 1,677 |
| Venice,             | 112      | 19              | 2     |
| Nantes,             |          | 11              | 16    |
| Paris,              |          | 41              | 3     |
| Bordeaux,           | 293      | 3               | 1,844 |
| Naples,             | 22       | 11              | 2     |
| Lisbon,             | 19       | 19              | 3     |
| 341                 |          |                 |       |
| Copperas—           |          |                 |       |
| San Francisco,      | 13 t.    | 10 c.           | £29   |
| Sydney,             | 4        | 13              | 4     |
| Cream of Tartar—    |          |                 |       |
| Mexico City,        | 6 c.     |                 | £28   |
| Disinfectants—      |          |                 |       |
| New York,           | 19 c.    | 2 q.            | £10   |
| Bombay,             | 11       | 3               | 15    |
| Dried Blood —       |          |                 |       |
| Ghent,              | 10 t.    | 2 c.            | 2 q.  |
| £20                 |          |                 |       |
| Gelatine—           |          |                 |       |
| Boston,             | 75 bxs.  |                 |       |
| Iron Nitrate—       |          |                 |       |
| Montreal,           | 2 t.     | 18 c.           | 3 q.  |
| £10                 |          |                 |       |
| Lead Nitrate—       |          |                 |       |
| Antwerp,            | 1 t.     |                 | 2 q.  |
| £19                 |          |                 |       |
| Lime—               |          |                 |       |
| Old Calabar         | 2 t.     | 10 c.           | £6    |
| Magnesium Chlorate— |          |                 |       |
| Genoa,              | 7 t.     | 8 c.            | £28   |
| Magnesium Sulphate— |          |                 |       |
| Lisbon,             | 8 cks.   |                 |       |
| Pernambuco,         | 20 brls. |                 |       |
| Seville,            |          |                 |       |
| Bombay,             |          | 5 c.            | £6    |
| Manure—             |          |                 |       |
| Charlottetown,      |          |                 |       |
| P. E. I.,           | 10 t.    |                 | £35   |
| St. Nazaire,        | 100      |                 | 262   |
| Las Palmas,         | 24       | 10 c.           | 202   |
| Oxalic Acid—        |          |                 |       |
| Mexico,             | 6 c.     |                 | £11   |
| Paint—              |          |                 |       |
| Accra,              | 1 ck.    |                 |       |
| Alexandria,         |          | 20 kgs. 56 dms. |       |
| Amboyna,            |          | 80              |       |
| Antwerp,            | 8        | 24              | 57    |
| Bahia,              | 3        |                 |       |
| Beyrout,            | 15       |                 |       |
| Bolama,             |          |                 | 8     |



|                        |       |          |
|------------------------|-------|----------|
| Bombay, 93 cs.         | 1,801 | 55 brls. |
| Brisbane, 8            |       |          |
| B. Ayres, 25           |       |          |
| Cadiz, 14              |       |          |
| Calcutta, 20 bxs.      |       |          |
| Chama, 8               |       |          |
| Fiume, 24 dms.         |       |          |
| Gibraltar, 122         |       |          |
| Gd. Bassam, 40         |       |          |
| Hio, 159               |       |          |
| Honolulu, 19           |       |          |
| Iquique, 10            |       |          |
| La Union, 11           |       |          |
| Leghorn, 2             |       |          |
| Maceio, 32             |       |          |
| Malta, 91              |       |          |
| Manila, 2 450          |       |          |
| Mayaguez, 3 172        |       |          |
| M. Video, 96           |       |          |
| Montreal, 6 brls.      |       |          |
| Pimental, 49           |       |          |
| Punta Jorda, 3         |       |          |
| Rosario, 12            |       |          |
| Rotterdam, 25          |       |          |
| St. John's, Nfld., 115 |       |          |
| St. Nazaire, 1 cs.     |       |          |
| Santiago, 4            |       |          |
| Savannah, 8 100        |       |          |
| Singapore, 36          |       |          |
| Talcahuano, 15         |       |          |
| Trinidad, 1 20         |       |          |
| Valparaiso, 32 cs.     | 203   | 38       |
| Vera Cruz, 40          |       |          |

**Painters' Colours—**

|                         |     |  |
|-------------------------|-----|--|
| Calcutta, 2 cs.         |     |  |
| Cartagena, N.G. 56 pks. |     |  |
| Copenhagen, 20 cks.     |     |  |
| Ghent, 16               |     |  |
| Gothenburg, 80 bgs      |     |  |
| Hamburg, 105            |     |  |
| Havana, 4               |     |  |
| Lisbon, 20 kgs.         | 200 |  |
| Maceio, 10              |     |  |
| Madeira, 32             |     |  |
| Malta, 15 12            |     |  |
| Manaos, 12 2            |     |  |
| Marseilles, 10 100      |     |  |
| Menada, 3               |     |  |
| M. Video, 120 4         |     |  |
| Montreal, 45 83         |     |  |
| N. York, 112 19         |     |  |
| Oporto, 2 cs. 30        |     |  |
| Para, 5                 |     |  |
| Pernambuco, 104 40 kgs. |     |  |
| Piraeus, 1              |     |  |
| Ponce, 1                |     |  |
| Rangoon, 1              |     |  |
| St. John's, Nfld., 2 78 |     |  |
| Salaora, 2 brls.        |     |  |
| San Francisco, 115      |     |  |
| Santander, 20           |     |  |
| Seville, 6 cs.          |     |  |
| Sydney, 1               |     |  |
| Tripoli, 2 36           |     |  |
| Valparaiso, 140 50      |     |  |
| Vigo, 4                 |     |  |

**Paraffin Wax—**

|                |        |  |
|----------------|--------|--|
| Boston, 40 cs. |        |  |
| Para, 20       | 5 cks. |  |

**Phosphorus—**

|                  |      |    |
|------------------|------|----|
| Hio, 15 c.       | £150 |    |
| Vera Cruz, 3 cs. |      | 33 |

**Potash Salts—**

|                |     |  |
|----------------|-----|--|
| Gepoa, 10 cks. | £33 |  |
|----------------|-----|--|

**Potashes—**

|                |     |  |
|----------------|-----|--|
| B. Ayres, 1 t. | £22 |  |
|----------------|-----|--|

**Potassium Bichromate—**

|                     |      |      |
|---------------------|------|------|
| Antwerp, 4 t. 15 c. | 5 q. | £187 |
| Rio de Janeiro, 9   | 1    | 19   |

**Potassium Chlorate—**

|                          |     |     |
|--------------------------|-----|-----|
| New York, 1 t. 10 c.     | £60 |     |
| Calcutta, 1 10           |     | 72  |
| Gothenburg, 2            |     | 94  |
| Konigsberg, 1            |     | 44  |
| Santander, 1             |     | 40  |
| Odessa, 4                |     | 165 |
| Hio, 8 15                |     | 318 |
| San Louis Potosi, 3 cks. |     | 33  |
| San Francisco, 2 t. 10   |     | 98  |
| Boston, 5                |     | 193 |
| Leghorn, 10              |     | 20  |

**Potassium Cyanide—**

|                |     |  |
|----------------|-----|--|
| Curacao, 10 c. | £80 |  |
|----------------|-----|--|

**Potassium Prussiate—**

|                |      |     |
|----------------|------|-----|
| M. Video, 7 c. | 1 q. | £24 |
| B. Ayres, 1    |      | 4   |

**Potassium Stannate—**

|              |      |  |
|--------------|------|--|
| Bombay, 2 t. | £108 |  |
|--------------|------|--|

**Salt—**

|                   |  |  |
|-------------------|--|--|
| Accra, 11 t. 5 c. |  |  |
| Adjuab, 12 10     |  |  |
| Algoa Bay, 8      |  |  |
| Ambriz, 5         |  |  |
| Antwerp, 165      |  |  |

|                         |  |  |
|-------------------------|--|--|
| Baltimore, 600          |  |  |
| Belize, 4               |  |  |
| Beira, 32               |  |  |
| Benin, 16               |  |  |
| Boston, 300             |  |  |
| Brisbane, 40            |  |  |
| B. Ayres, 37            |  |  |
| Calcutta, 3,474         |  |  |
| Charlottetown, 510      |  |  |
| Christiania, 10         |  |  |
| Ghent, 55               |  |  |
| Halifax, 500            |  |  |
| Halmstad, 292           |  |  |
| Hamburg, 110 17         |  |  |
| Manaos, 350             |  |  |
| Manoh, 10               |  |  |
| Mazatlan, 4             |  |  |
| M. Video, 20            |  |  |
| Montreal, 158           |  |  |
| Newcastle, 275          |  |  |
| Old Calabar, 21         |  |  |
| Opobo, 25               |  |  |
| Para, 231               |  |  |
| Pelotas, 205 10         |  |  |
| Pugwash, 80             |  |  |
| Quebec, 4,626           |  |  |
| Rio de Janeiro, 300 cs. |  |  |
| Rio Grande, 50          |  |  |
| Sapeli, 25 bgs.         |  |  |
| Sheddan, 398            |  |  |
| Sierra Leone, 200       |  |  |
| Sydney, 130             |  |  |
| Stockholm, 100          |  |  |
| Sulymah, 10             |  |  |
| Trinidad, 23            |  |  |
| Valparaiso, 3           |  |  |
| Vancouver, 10           |  |  |

**Salt Cake—**

|                        |      |     |
|------------------------|------|-----|
| Baltimore, 111 t. 1 c. | £143 |     |
| Catania, 1 12          |      | 3   |
| Gijon, 53 12           |      | 120 |

**Saltpetre—**

|                      |    |    |
|----------------------|----|----|
| Cartagena, 7 c. 1 q. | £9 |    |
| Brisbane, 10         |    | 11 |
| Para, 10             |    | 12 |
| Pernambuco, 2 t. 17  | 1  | 80 |

**Soap—**

|                        |  |          |
|------------------------|--|----------|
| Abonnema, 500 bxs.     |  |          |
| Aden, 100              |  |          |
| Adjuab, 105 cs.        |  |          |
| Alexandria, 50 45 kgs. |  |          |
| Algoa Bay, 1,590       |  |          |
| Axim, 100              |  |          |
| Barbadoes, 400         |  |          |
| Belize, 1,700          |  |          |
| Bombay, 500 31         |  | 3 cks    |
| Calcutta, 205 4        |  |          |
| Cameroons, 120         |  |          |
| Cape Town, 250 75t     |  |          |
| Cape Coast, 120        |  |          |
| Chama, 20              |  |          |
| Constantinople, 146 1  |  |          |
| Coronel, 1             |  |          |
| Curacao, 417           |  |          |
| Degama, 500            |  |          |
| Demerara, 502          |  |          |
| Dominica, 45           |  |          |
| E. London, 401 35      |  | 14 brls. |
| Genoa, 40              |  |          |
| Gibraltar, 390         |  |          |
| Guayaquil, 1           |  |          |
| Halifax, 300           |  |          |
| Havre, 495             |  |          |
| Hong Kong, 411         |  |          |
| Honolulu, 3            |  |          |
| Iquique, 10            |  |          |
| La Guayra, 1           |  |          |
| Las Palmas, 45         |  |          |
| Malta, 5               |  |          |
| Mauritius, 1,605       |  |          |
| Mazatlan, 1            |  |          |
| Melilla, 25            |  |          |
| Montreal, 101          |  |          |
| Mossel Bay, 500        |  |          |
| New York, 167 30       |  |          |
| Old Calabar, 237       |  |          |
| Opobo, 500             |  |          |
| Para, 2                |  |          |
| Penang, 10             |  |          |
| Pt. Natal, 370 250     |  |          |
| Quebec, 2              |  |          |
| Quezon, 500            |  |          |
| Rio de Janeiro, 32     |  |          |
| Rotterdam, 510         |  |          |
| St. John's, Nfld., 303 |  |          |
| St. Nazaire, 2,500     |  |          |
| St. Thomas, 356        |  |          |
| San Fernando, 250      |  |          |
| Sapeli, 200            |  |          |
| Savannah, 300 4        |  |          |
| Shanghai, 7,758        |  |          |
| Singapore, 250 95      |  |          |

|                     |  |  |
|---------------------|--|--|
| Teneriffe, 224      |  |  |
| Trinidad, 1,500     |  |  |
| Warri, 200          |  |  |
| Zanzibar, 250       |  |  |
| Wellington, N.Z., 2 |  |  |
| Yokohama, 10        |  |  |

**Soda Alkali—**

|                   |  |  |
|-------------------|--|--|
| Catania, 15 brls. |  |  |
| Genoa, 64         |  |  |
| Gibraltar, 25     |  |  |
| Leghorn, 40       |  |  |
| Messina, 32       |  |  |
| Smyrna, 40        |  |  |
| Toronto, 35       |  |  |

**Soda Ash—**

|                              |  |  |
|------------------------------|--|--|
| Antwerp, 110 bgs.            |  |  |
| Bahia, 20 kgs.               |  |  |
| Baltimore, 400               |  |  |
| Barcelona, 14 cks.           |  |  |
| Boston, 605 453 97 tcs.      |  |  |
| Brisbane, 68                 |  |  |
| Calcutta, 121                |  |  |
| Callao, 15                   |  |  |
| Catania, 50                  |  |  |
| Copenhagen, 100              |  |  |
| Genoa, 100                   |  |  |
| Ghent, 7                     |  |  |
| Gothenburg, 10               |  |  |
| Hamburg, 100 4               |  |  |
| Hio, 63                      |  |  |
| Jaffa, 50 brls.              |  |  |
| Malta, 100                   |  |  |
| M. Video, 100 100            |  |  |
| New York, 2,436 118 116 tcs. |  |  |
| Philadelphia, 2,328 178      |  |  |
| Piraeus, 10 6                |  |  |
| Quebec, 200                  |  |  |
| Rotterdam, 200               |  |  |
| Salonica, 80 brls.           |  |  |
| Saltillo, 40                 |  |  |
| San Francisco, 303           |  |  |
| Sydney, 169                  |  |  |
| Stockholm, 5                 |  |  |
| Syria, 90                    |  |  |
| Yokohama, 150                |  |  |

**Soda Crystals—**

|                      |  |  |
|----------------------|--|--|
| Alexandria, 89 brls. |  |  |
| Boston, 476          |  |  |
| Calcutta, 30         |  |  |
| Halifax, 100         |  |  |
| Hamburg, 100 bgs.    |  |  |
| Honolulu, 34         |  |  |
| Iquique, 200 kgs.    |  |  |
| Montreal, 100        |  |  |
| Quebec, 375          |  |  |
| Talcahuano, 100      |  |  |
| Valparaiso, 200      |  |  |

**Sodium Arseniate—**

|                 |  |  |
|-----------------|--|--|
| Boston, 10 cks. |  |  |
|-----------------|--|--|

**Sodium Bicarbonate—**

|                                     |  |          |
|-------------------------------------|--|----------|
| Alexandria, 20 kgs. 6 cks. 10 brls. |  |          |
| Antwerp, 32                         |  | 4        |
| Baltimore, 375                      |  | 90       |
| Bilbao, 3 cs.                       |  |          |
| Bombay, 60                          |  | 50 bgs.  |
| Bordeaux, 45                        |  | 75 pks.  |
| Boston, 100                         |  |          |
| Brisbane, 90                        |  |          |
| Calcutta, 60                        |  |          |
| Cape Town, 5                        |  |          |
| Dantzic, 25                         |  | 2 brls.  |
| E. London, 50                       |  | 10       |
| Genoa, 150                          |  |          |
| Halifax, 175                        |  |          |
| Hamburg, 7                          |  |          |
| Hio, 1,000                          |  |          |
| Ibrail, 40                          |  |          |
| Liban, 100                          |  | 100      |
| Leghorn, 50                         |  |          |
| Malaga, 105 3                       |  | 7 pks.   |
| Marseilles, 168 12                  |  |          |
| Messina, 30                         |  |          |
| M. Video, 45                        |  |          |
| Montreal, 285                       |  |          |
| Natal, 20                           |  |          |
| New York, 60                        |  |          |
| Odessa, 20                          |  |          |
| Philadelphia, 100                   |  |          |
| Pt. Natal, 40                       |  |          |
| Quebec, 240                         |  |          |
| Rangoon, 100                        |  |          |
| Rockhampton, 250                    |  |          |
| Santander, 110 4                    |  | 14 brls. |
| Seville, 180                        |  |          |
| Smyrna, 40                          |  |          |
| Sydney, 200                         |  |          |
| Tangiers, 10 bgs.                   |  |          |
| Trieste, 220 50                     |  |          |
| Trinidad, 20                        |  |          |
| Victoria, V.I., 4                   |  |          |
| Cartagena, Sp., 50                  |  | 10       |
| Barcelona, 100                      |  |          |

**Sodium Bichromate—**

|                 |  |  |
|-----------------|--|--|
| Antwerp, 4 cks. |  |  |
| New York, 2     |  |  |

**Sodium Carbonate—**

|                        |         |  |
|------------------------|---------|--|
| Cape Town, 6 brls.     |         |  |
| New York, 135 kgs. 112 |         |  |
|                        | 27 cks. |  |

**Sodium Chlorate—**

|                  |  |  |
|------------------|--|--|
| Hamburg, 15 kgs. |  |  |
| Boston, 75       |  |  |

**Sodium Silicate—**

|                    |  |         |
|--------------------|--|---------|
| Alexandria, 4 cks. |  |         |
| Corfu, 12          |  |         |
| E. London, 12      |  |         |
| Hamburg, 24        |  |         |
| Hio, 32            |  |         |
| Lisbon, 115        |  |         |
| Oporto, 16         |  | 20 bgs. |
| Piraeus, 15        |  |         |
| San Sebastian, 32  |  |         |
| Seville, 160       |  |         |
| Singapore, 7       |  |         |
| Sydney, 10         |  |         |
| Tampico, 10        |  |         |
| Vera Cruz, 48      |  |         |

**Sodium Sulphate—**

|                      |  |  |
|----------------------|--|--|
| Pernambuco, 20 brls. |  |  |
|----------------------|--|--|

**Sulphur—**

|                      |  |      |
|----------------------|--|------|
| Chatham, N.B., 75 t. |  |      |
| Boston, 197          |  | 5 c. |
| Montreal, 75         |  |      |
| Halifax, 7           |  | 10   |
| Honolulu, 9          |  | 3 q. |

**Sulphuric Acid—**

|               |  |  |
|---------------|--|--|
| Madeira, 1 t. |  |  |
|---------------|--|--|

**Superphosphates—**

|                 |  |  |
|-----------------|--|--|
| Cullera, 200 t. |  |  |
|-----------------|--|--|

**Tannic Acid—**

|                     |  |  |
|---------------------|--|--|
| Montreal, 2 c. 2 q. |  |  |
|---------------------|--|--|

**Tartaric Acid—**

|                   |  |  |
|-------------------|--|--|
| Mexico City, 3 c. |  |  |
| Talcahuano, 2     |  |  |

**Tin Crystals—**

|              |  |  |
|--------------|--|--|
| Santos, 2 c. |  |  |
|--------------|--|--|

**Turpentine—**

|                  |  |  |
|------------------|--|--|
| Rotterdam, 15 c. |  |  |
|------------------|--|--|

**Yarnish—**

|                     |  |  |
|---------------------|--|--|
| Barcelona, 12 brls. |  |  |
| Bombay, 7 cs.       |  |  |
| Leghorn, 4          |  |  |
| Madras, 5           |  |  |
| Melbourne, 63       |  |  |

**Zinc Chloride—**

|                    |  |  |
|--------------------|--|--|
| Bombay, 10 t. 2 c. |  |  |
|--------------------|--|--|

**MANCHESTER****Week ending May 13th.****Alumina Acetate—**

|                |  |  |
|----------------|--|--|
| Rouen, 10 cks. |  |  |
|----------------|--|--|

**Ammonium Carbonate—**

|                  |  |  |
|------------------|--|--|
| Antwerp, 10 kgs. |  |  |
|------------------|--|--|

**Aniline Colours—**

|                   |  |  |
|-------------------|--|--|
| Rouen, 1 kg.      |  |  |
| Hamburg, 14       |  |  |
| Rotterdam, 2 cks. |  |  |

**Aniline Oil—**

|                  |  |  |
|------------------|--|--|
| Hamburg, 10 dms. |  |  |
|------------------|--|--|

**Aniline Salt—**

|                 |  |  |
|-----------------|--|--|
| Hamburg, 5 pns. |  |  |
|-----------------|--|--|

**Benzol—**

|                           |  |  |
|---------------------------|--|--|
| Rotterdam, 20 dms. 24 brl |  |  |
|---------------------------|--|--|

**Carbolic Acid—**

|                           |  |  |
|---------------------------|--|--|
| Rotterdam, 41 cks. 10 brl |  |  |
| Treport, 5 192 brls.      |  |  |

**Caustic Soda—**

|                     |  |        |
|---------------------|--|--------|
| Alexandria, 70 dms. |  |        |
| Bombay, 60          |  |        |
| Treport, 15         |  | 26 brl |



|                             |                      |
|-----------------------------|----------------------|
| stals—                      | 2 cks.               |
| am,                         | 50 cks. 35 dms.      |
| tine—                       | 12 dms.              |
| HULL.                       |                      |
| Week ending May 9th.        |                      |
| ing Powder—                 | 46 cks.              |
| Soda—                       | 80 cks.              |
| for,                        | 34 cs.               |
| als (otherwise undescribed) | 13 cks. 3 cs.        |
| dam,                        | 5 pks.               |
| ania, 355 silbs.            | 13                   |
| agen,                       | 21 cks. 6            |
| burg,                       | 13 13                |
| rg,                         | 145                  |
| for,                        | 59                   |
| 45                          | 25                   |
| rk,                         | 60                   |
| lam,                        | 60 116 150           |
| 7                           | 20                   |
| ersburg, 210                | 1 540                |
| 2                           |                      |
| eed Oil—                    |                      |
| p,                          | 970 c.               |
| dam                         | 1,383                |
| nsand,                      | 572                  |
| nsand,                      | 17                   |
| k,                          | 56                   |
| 400                         |                      |
| burg,                       | 42                   |
| 102                         |                      |
| rg,                         | 1,412                |
| lam,                        | 1,007                |
| ilm,                        | 102                  |
| 01                          |                      |
| e—                          |                      |
| rg,                         | 20 brls.             |
| ffs (otherwise undescribed) |                      |
| for,                        | 50 cks.              |
| lam,                        | 1                    |
| O. I.                       |                      |
| p,                          | 48 c.                |
| dam,                        | 105                  |
| us,                         | 35                   |
| nsund,                      | 11                   |
| nsand,                      | 35                   |
| nia                         | 610                  |
| agen                        | 27                   |
| eim,                        | 242                  |
| rg,                         | 1,425                |
| lam,                        | 53                   |
| ger,                        | 88                   |
| 549 t.                      |                      |
| aline—                      | 250 bgs.             |
| ra' Colours—                |                      |
| p,                          | 42 cks. 3 cs. 5 pks. |
| nsand,                      | 1 4 dms.             |
| ania,                       | 6 2 12 dms.          |
| agen,                       | 3 2 7 pks.           |
| eim,                        | 40 dms.              |
| k,                          | 2                    |
| burg                        | 152                  |
| 1 pk.                       |                      |
| rg,                         | 16 15                |
| gen,                        | 1                    |
| for,                        | 5 31 16 dms.         |
| erg,                        | 32                   |
| ork,                        | 10                   |
| lam,                        | 10                   |
| 100 pks.                    |                      |
| olm,                        | 10 14                |
| ersburg, 314                | 30                   |
| n Wax—                      |                      |
| 15 bgs.                     |                      |
| p,                          | 144 t.               |
| k,                          | 114 t.               |
| agen,                       | 5 t.                 |
| p,                          | 100 bxs. 40 cs.      |
| ania,                       | 10                   |
| eim,                        | 2                    |
| olm,                        | 23 cks.              |
| arg,                        | 15                   |

|                |              |
|----------------|--------------|
| Tar—           | 6 cks.       |
| Antwerp,       | 11           |
| Amsterdam,     | 10           |
| Bremen,        | 10           |
| Copenhagen,    | 150          |
| Helsingfors,   | 2            |
| Rotterdam,     | 2            |
| Turpentine—    |              |
| Christiansund, | 2 cks.       |
| Drontheim,     | 1            |
| Varnish—       |              |
| Hamburg,       | 6 cks. 2 cs. |
| Rotterdam,     | 1            |
| Stockholm,     | 4            |

## GLASGOW.

Week ending May 14th.

|                                       |              |
|---------------------------------------|--------------|
| Alum—                                 | 10 t. 10 c.  |
| Canada,                               | 10 t. 10 c.  |
| Ammonium Sulphate—                    |              |
| Demerara,                             | 227 t. 6½ c. |
| Trinidad,                             | 62 7         |
| Castellon,                            | 70 14        |
| Cullera,                              | 107 ½        |
| Valencia,                             | 207 9        |
| Bleaching Powder—                     |              |
| Bombay,                               | 2 t. 1½ c.   |
| Sydney,                               | 5 19½        |
| Caustic Soda—                         |              |
| Philadelphia,                         | 7 t. 6 c.    |
| Chemicals (otherwise undescribed)     |              |
| Amsterdam,                            | £31          |
| Coal Products—                        |              |
| Benzol                                |              |
| Hamburg,                              | 8 t. 5 c.    |
| Creosote Oil                          |              |
| Bordeaux,                             | £225         |
| Naphtha Oil                           |              |
| Bordeaux,                             | £70          |
| Pitch                                 |              |
| Rotterdam,                            | 192 t.       |
| Gothenburg,                           | £160         |
| Italy,                                | 267 9 c.     |
| Canada,                               | 218          |
| U.S.A.,                               | 136          |
| Tar                                   |              |
| Gothenburg,                           | £25          |
| Catania,                              | 28           |
| Montreal,                             | 90           |
| U.S.A.,                               | 135          |
| Coal Products (otherwise undescribed) |              |
| Rotterdam,                            | 19 t. 10 c.  |
| Arendal,                              | £32          |
| Christiania,                          | 315          |
| Amsterdam,                            | 12           |
| Cottonseed Oil—                       |              |
| Demerara,                             | 1 t. 18½ c.  |
| Dyestuffs (otherwise undescribed)     |              |
| Australia,                            | £38          |
| Amsterdam,                            | 364          |
| Farina—                               |              |
| Rio de Janeiro,                       | 1 t. 19½ c.  |
| U.S.A.,                               | £31          |
| Gelatine—                             |              |
| Canada,                               | £73          |
| U.S.A.,                               | 713          |
| Glucose—                              |              |
| Pt. Elizabeth,                        | 1 t. 17 c.   |
| Ottawa,                               | 4 t. 4 c.    |
| Lead Acetate—                         |              |
| Bombay,                               | 4 t. 4 c.    |
| Linseed Oil—                          |              |
| E. London,                            | 1 t. 4½ c.   |
| Sydney,                               | 1 9½         |
| Trinidad,                             | 3 5½         |
| Durban,                               | 2            |
| S. John's, N'fd,                      | 1 16         |
| Litharge—                             |              |
| Bloemfontein,                         | £21          |
| Logwood—                              |              |
| Australia,                            | £37          |
| Magnesium Sulphate—                   |              |
| Sydney,                               | £25          |
| Manure—                               |              |
| Trinidad,                             | 80 t. 10 c.  |
| Amsterdam,                            | 3            |
| Hamburg,                              | 134 10       |
| Valencia,                             | 34 11½       |
| Paint—                                |              |
| Bombay,                               | £22          |
| Painters' Colours—                    |              |
| Bombay,                               | £198         |
| Cape Town,                            | 292          |
| Durban,                               | 146          |
| Sydney,                               | 193          |
| Amsterdam,                            | 16           |
| Rotterdam,                            | 40           |
| Bangkok,                              | 143          |

|                       |             |
|-----------------------|-------------|
| Calcutta,             | 177         |
| Singapore,            | 58          |
| Dunedin,              | 50          |
| Turin,                | 23          |
| Valparaiso,           | 39          |
| Paraffin Wax—         |             |
| Rio de Janeiro,       | £50         |
| Barcelona,            | 68          |
| Valencia,             | 82          |
| Potassium Bichromate— |             |
| Australia,            | £200        |
| Bombay,               | 132         |
| Soap—                 |             |
| Bombay,               | 1 t. 15½ c. |
| Durban,               | 4 9         |
| E. London,            | 2 10        |
| Transvaal,            | 3           |
| Trinidad,             | 2 16½       |
| Penang,               | 2 10        |
| Jamaica,              | 1 5         |
| Valparaiso,           | 1 5         |
| Iceland,              | 2½ 20 lbs.  |
| Sodium Bichromate—    |             |
| Bombay,               | 2 t. ½ c.   |
| Sodium Sulphate—      |             |
| Canada,               | £41         |
| Starch—               |             |
| Rio de Janeiro,       | £25         |
| Sulphur—              |             |
| Demerara,             | 6 t. 12½ c. |
| Sulphuric Acid—       |             |
| Demerara,             | £50         |
| Trinidad,             | 50          |
| Rangoon,              | 283         |
| Treacle—              |             |
| Algoa Bay,            | 2 t. 10 c.  |
| E. London,            | 3 10        |
| Rotterdam,            | 2 8         |
| Gothenburg,           | £1,134      |
| Bergen,               | 2 10        |
| Christiania,          | 53 8        |
| Christiansand,        | 6 19        |
| Drontheim,            | 7 6½        |
| Cape Colony,          | 3 10        |

## TYNE.

Week ending May 9th.

|                     |             |
|---------------------|-------------|
| Alkali—             |             |
| St. Petersburg,     | 112 t. 3 c. |
| Amsterdam,          | 43 19       |
| Christiania,        | 16 7        |
| Oporto,             | 2 4         |
| Barcelona,          | 5 2         |
| Ammonium Carbonate— |             |
| Copenhagen,         | 1 pcl.      |
| Ammonium Chloride—  |             |
| St. Petersburg,     | 90 t. 15 c. |
| Barcelona,          | 1 2         |
| Antimony—           |             |
| Hamburg,            | 5 t.        |
| Arsenic—            |             |
| Naples,             | 18 c.       |
| Barium—             |             |
| Hamburg,            | 1 t. 1 c.   |
| Barium Carbonate—   |             |
| St. Petersburg,     | 133 t.      |
| Riga,               | 5           |
| Benzine—            |             |
| Stavanger,          | 6 c.        |
| Bleaching Powder—   |             |
| Genoa,              | 5 t. 11 c.  |
| Ancona,             | 2 16        |
| Antwerp,            | 32 4        |
| Hamburg,            | 40 11       |
| Copenhagen,         | 51 14       |
| Riga,               | 14 19       |
| Gothenburg,         | 47 17       |
| Lisbon,             | 7 1         |
| Amsterdam,          | 30 12       |
| Rotterdam,          | 29 17       |
| Trondhjem,          | 9 10        |
| Christiania,        | 1 6         |
| St. Petersburg,     | 346 18      |
| Caustic Soda—       |             |
| Naples,             | 10 t. 3 c.  |
| Copenhagen,         | 22 19       |
| Venice,             | 43 10       |
| Riga,               | 10 16       |
| Genoa,              | 5 17        |
| Gothenburg,         | 70 3        |
| Amsterdam,          | 7 1         |
| Rotterdam,          | 34 16       |
| Trondhjem,          | 3 10        |
| St. Petersburg,     | 114 18      |
| Coppers—            |             |
| Copenhagen,         | 5 t. 4 c.   |
| Fluor Spar—         |             |
| Gothenburg,         | 51 t.       |
| Linseed Oil—        |             |
| Genoa,              | 3 t. 14 c.  |

|                      |             |
|----------------------|-------------|
| Litharge—            |             |
| Oporto,              | 1 t. 1 c.   |
| Antwerp,             | 2 15        |
| Genoa,               | 1           |
| Lisbon,              | 1 7         |
| Hamburg,             | 1 9         |
| Magnesia—            |             |
| Catania,             | 2 c.        |
| Trieste,             | 2           |
| Hamburg,             | 1 t. 15     |
| St. Petersburg,      | 5           |
| Paint—               |             |
| Antwerp,             | 3 t. 1 c.   |
| Hamburg,             | 2           |
| Bari,                | 4           |
| Genoa,               | 7 11        |
| Painters' Colours—   |             |
| Antwerp,             | 1 c.        |
| Paraffin Scale—      |             |
| Gothenburg,          | 9 c.        |
| Soda—                |             |
| Ancona,              | 9 t. 15 c.  |
| Naples,              | 11 1        |
| Oporto,              | 3 5         |
| Antwerp,             | 10 3        |
| Venice,              | 9 18        |
| Genoa,               | 16 16       |
| Amsterdam,           | 88 17       |
| Rotterdam,           | 46 4        |
| Christiania,         | 16 9        |
| Randers,             | 21 19       |
| Soda Ash—            |             |
| Ancona,              | 2 t. 1 c.   |
| Venice,              | 5 8         |
| Gothenburg,          | 68 7        |
| Sodium Carbonate—    |             |
| Antwerp,             | 12 t. 19 c. |
| Sodium Hyposulphite— |             |
| Oporto,              | 14 c.       |
| Gothenburg,          | 1 t. 1      |
| Sodium Sulphate—     |             |
| Oporto,              | 1 t. 13 c.  |
| Helgenas,            | 350         |
| Sulphur—             |             |
| Antwerp,             | 5 t.        |
| Gothenburg,          | 60          |
| Varnish—             |             |
| Genoa,               | 5 c.        |
| White Lead—          |             |
| Oporto,              | 11 c.       |
| Copenhagen,          | 4 t. 3      |
| Riga,                | 4 7         |
| Lisbon,              | 75 12       |
| Witherite—           |             |
| St. Petersburg,      | 11 t.       |

## GOOLE.

Week ending May 6th.

|                                       |            |
|---------------------------------------|------------|
| Benzol—                               |            |
| Antwerp,                              | 48 cks.    |
| Boulogne,                             | 49         |
| Hamburg,                              | 48         |
| Rotterdam,                            | 25         |
| Chemicals (otherwise undescribed)     |            |
| Hamburg,                              | 8 cks.     |
| Coal Products (otherwise undescribed) |            |
| Antwerp,                              | 79 cks.    |
| Boulogne,                             | 57 3 cs.   |
| Ghent,                                | 1          |
| Hamburg,                              | 10 50 bgs. |
| Rotterdam,                            | 78 10      |
| Dyestuffs (otherwise undescribed)     |            |
| Amsterdam,                            | 1 ck.      |
| Antwerp,                              | 1 pk.      |
| Dunkirk,                              | 34 bgs.    |
| Ghent,                                | 4 cs.      |
| Hamburg,                              | 25         |
| Logwood—                              |            |
| Hamburg,                              | 20 t.      |
| Manure—                               |            |
| Ghent,                                | 188 bgs.   |
| Rotterdam,                            | 200        |
| Pitch—                                |            |
| Antwerp,                              | 561 t.     |

## GRIMSBY.

Week ending May 9th.

|                                       |                       |
|---------------------------------------|-----------------------|
| Alkali—                               |                       |
| Hamburg,                              | 8 cs.                 |
| Rotterdam,                            | 7                     |
| Chemicals (otherwise undescribed)     |                       |
| Hamburg,                              | 24 dms.               |
| Malmo,                                | 5 cs.                 |
| Coal Products (otherwise undescribed) |                       |
| Dieppe,                               | 307 cks. 1 cs. 3 pks. |
| Rotterdam,                            | 3                     |



## PRICES CURRENT.

WEDNESDAY, MAY 20TH, 1896.

PREPARED BY MESSRS. HIGGINBOTTOM AND CO., 116, PORTLAND STREET, MANCHESTER.

The values stated are F.O.R. at maker's works, or at usual ports of shipment in U.K. The price in different localities may vary.

## Acids:—

|                                            | £                 | s.   | d.       |
|--------------------------------------------|-------------------|------|----------|
| Acetic, 25% and 40% .. .. .                | per cwt.          | 6/   | 8 9/-    |
| Glacial .. .. .                            | per lb.           | 10/- |          |
| Arsenic S.G., 2000° .. .. .                | per lb.           | 1    | 2 0      |
| Fluoric .. .. .                            | per lb.           | 0    | 0 3 1/4  |
| Muriatic (Tower Salts), 30° Tw. .. .. .    | per bottle        | 0    | 0 10     |
| (Cylinder), 30° Tw. .. .. .                | per lb.           | 0    | 3 0      |
| Nitric 80° Tw. .. .. .                     | per lb.           | 0    | 0 1 1/2  |
| Nitrous .. .. .                            | per lb.           | 0    | 0 1 1/4  |
| Oxalic .. .. .                             | nett              | 0    | 0 3 1/2  |
| Phosphoric, 1750° .. .. .                  | per lb.           | 0    | 1 0      |
| Picric .. .. .                             | per lb.           | 0    | 0 1 1/4  |
| Sulphuric (fuming 50%) .. .. .             | per ton           | 15   | 10 0     |
| (monohydrate) .. .. .                      | per lb.           | 5    | 10 0     |
| (Pyrites, 168°) .. .. .                    | per lb.           | 3    | 0 0      |
| (free from arsenic, 145°) .. .. .          | per lb.           | 1    | 5 0      |
| Sulphurous (solution) S.G. 1025 .. .. .    | per lb.           | 3    | 0 0      |
| Tannic (pure) .. .. .                      | per lb.           | 0    | 1 2 1/2  |
| Tartaric .. .. .                           | per lb.           | 0    | 1 3      |
| Arsenic, white powdered .. .. .            | nett per ton      | 23   | 0 0      |
| Alum (loose lump) .. .. .                  | per lb.           | 4    | 10 0     |
| Alumina Sulphate (pure) .. .. .            | per lb.           | 4    | 12 6     |
| Aluminoferic .. .. .                       | per lb.           | 2    | 5 0      |
| Aluminium .. .. .                          | per lb.           | 0    | 2 10     |
| Ammonia, Anhydrous .. .. .                 | per lb.           | 0    | 1 4      |
| " 880=28° B. .. .. .                       | per lb.           | 0    | 0 2 3/4  |
| " =24° B. .. .. .                          | per lb.           | 0    | 0 1 1/4  |
| Carbonate .. .. .                          | nett              | 0    | 0 3      |
| Muriate .. .. .                            | per ton           | 22   | 0 0      |
| (sal-ammoniac) 1st & 2nd .. .. .           | per cwt.          | 39/- | 37/-     |
| Nitrate .. .. .                            | per ton           | 37   | 10 0     |
| Phosphate .. .. .                          | per lb.           | 0    | 0 6 1/2  |
| Sulphate (grey) London .. .. .             | per ton           | 8    | 2 6      |
| (grey) Hull .. .. .                        | per lb.           | 8    | 1 3      |
| Aniline Oil (pure) .. .. .                 | per lb.           | 0    | 0 7 1/4  |
| Aniline Salt .. .. .                       | per lb.           | 0    | 0 6 1/4  |
| Antimony .. .. .                           | per ton           | 30   | 0 0      |
| (tartar emetic) .. .. .                    | per lb.           | 0    | 0 9 1/2  |
| (golden sulphide) .. .. .                  | per lb.           | 0    | 0 10     |
| Barium Chloride .. .. .                    | per ton           | 7    | 0 0      |
| Carbonate (native) .. .. .                 | per lb.           | 3    | 10 0     |
| Sulphate (native levigated) .. .. .        | per cwt.          | 42/6 | to 65/-  |
| Bleaching Powder, 35% .. .. .              | nett              | 6    | 17 6     |
| Liquor, 7% .. .. .                         | per lb.           | 3    | 10 0     |
| Bisulphide of Carbon .. .. .               | per lb.           | 12   | 10 0     |
| Chromium Acetate (crystal) .. .. .         | per lb.           | 0    | 0 6      |
| Calcium Chloride .. .. .                   | per ton           | 2    | 2 6      |
| China Clay (at Runcorn) in bulk .. .. .    | per ton           | 15/- | to 30/-  |
| <b>Coal Tar Products and Dyes:—</b>        |                   |      |          |
| Alizarine (artificial) 20% .. .. .         | nett per lb.      | 0    | 0 7      |
| Magenta .. .. .                            | per lb.           | 0    | 3 9      |
| Anthracene, 30% A, f.o.b. London .. .. .   | per unit per cwt. | 0    | 0 11 1/2 |
| Benzol, 90% .. .. .                        | per gallon        | 0    | 2 4 1/2  |
| 50/90 .. .. .                              | per lb.           | 0    | 2 1      |
| Carbolic Acid (crystallised 40°) .. .. .   | per lb.           | 0    | 0 7      |
| (crude 60°) .. .. .                        | per gallon        | 0    | 2 1      |
| Creosote (ordinary) .. .. .                | per lb.           | 0    | 0 1      |
| (filtered for Lucigen light) .. .. .       | per lb.           | 0    | 0 1 1/4  |
| Crude Naphtha 30% @ 120° C. .. .. .        | per lb.           | 0    | 0 8      |
| Grease Oils, 22° Tw. .. .. .               | per ton           | 2    | 10 0     |
| Pitch, f.o.b. Liverpool or Garston .. .. . | per ton           | 1    | 12 6     |
| Solvent Naphtha, 90% at 160° .. .. .       | per gallon        | 0    | 1 2      |
| "Lucigen" and "Wells" Oils .. .. .         | per lb.           | 0    | 0 2      |
| Copper .. .. .                             | per ton           | 46   | 11 3     |
| Sulphate .. .. .                           | per lb.           | 19   | 0 0      |
| Oxide (copper scales) .. .. .              | per lb.           | 42   | 10 0     |
| Glycerine (crude) .. .. .                  | per lb.           | 36   | 0 0      |
| (distilled S.G. 1250°) .. .. .             | per lb.           | 75   | 0 0      |
| Iodine .. .. .                             | nett, per oz.     | 0    | 0 9      |
| Iron Sulphate (copperas) .. .. .           | per ton           | 1    | 7 6      |
| Sulphide (antimony siag) .. .. .           | per lb.           | 2    | 0 0      |
| Lead (sheet) for cash .. .. .              | per lb.           | 12   | 5 0      |
| Litharge Flake (ex ship) .. .. .           | per lb.           | 14   | 10 0     |
| Acetate (white) .. .. .                    | per lb.           | 21   | 10 0     |
| brown .. .. .                              | per lb.           | 15   | 0 0      |
| Carbonate (white lead) pure .. .. .        | per lb.           | 16   | 0 0      |
| Nitrate .. .. .                            | per lb.           | 19   | 0 0      |

|                                                 |              |    |         |
|-------------------------------------------------|--------------|----|---------|
| Lime, Acetate (brown) (ex ship) .. .. .         | per ton      | 4  | 5 0     |
| (grey) (ex ship) .. .. .                        | per ton      | 7  | 7 6     |
| Magnesium (ribbon and wire) .. .. .             | per oz.      | 0  | 2 3     |
| Chloride (ex ship) .. .. .                      | per ton      | 2  | 7 6     |
| Carbonate .. .. .                               | per cwt.     | 1  | 17 6    |
| Calcined Magnesia .. .. .                       | per ton      | 9  | 15 0    |
| Sulphate (Epsom Salts) .. .. .                  | per ton      | 2  | 15 0    |
| Manganese, Sulphate .. .. .                     | per cwt.     | 2  | 15 0    |
| Borate .. .. .                                  | per cwt.     | 2  | 15 0    |
| Ore, 70% .. .. .                                | per ton      | 3  | 15 0    |
| Methylated Spirit, 61° O.P. .. .. .             | per gallon   | 0  | 1 8     |
| Naphtha (Wood), Solvent .. .. .                 | per lb.      | 0  | 3 0     |
| Miscible, 60° O.P. .. .. .                      | per lb.      | 0  | 3 3     |
| <b>Oils:—</b>                                   |              |    |         |
| Cotton-seed .. .. .                             | per ton      | 17 | 0 0     |
| Linseed .. .. .                                 | per ton      | 20 | 0 0     |
| Petroleum, American .. .. .                     | per gallon   | 0  | 0 6 1/2 |
| Stearine .. .. .                                | per ton      | 21 | 15 0    |
| Phosphorus (yellow) .. .. .                     | per lb.      | 0  | 2 2     |
| (red) .. .. .                                   | per lb.      | 0  | 2 8     |
| Potassium (metal) .. .. .                       | per oz.      | 0  | 3 7     |
| Bichromate .. .. .                              | per lb.      | 0  | 0 4 1/2 |
| Carbonate, 90% (ex ship) .. .. .                | per ton      | 16 | 15 0    |
| Chlorate .. .. .                                | per lb.      | 0  | 0 4 1/2 |
| Cyanide, 98% .. .. .                            | per lb.      | 0  | 1 2     |
| Hydrate (Caustic Potash) 90% .. .. .            | per ton      | 24 | 10 0    |
| (Caustic Potash) 75/80% .. .. .                 | per ton      | 20 | 10 0    |
| (Caustic Potash) 70/75% .. .. .                 | per ton      | 19 | 10 0    |
| Nitrate (refined) .. .. .                       | per cwt.     | 1  | 1 6     |
| Permanganate .. .. .                            | per cwt.     | 3  | 7 6     |
| Prussiate Yellow .. .. .                        | per lb.      | 0  | 0 7 1/4 |
| Sulphate, 90% (ex ship) .. .. .                 | per ton      | 9  | 15 0    |
| Muriate, 80% (do.) .. .. .                      | per ton      | 8  | 10 0    |
| Silver (metal) .. .. .                          | per oz.      | 0  | 2 7 1/2 |
| Nitrate .. .. .                                 | per lb.      | 0  | 2 0     |
| Sodium (metal) .. .. .                          | per lb.      | 0  | 2 11    |
| Carb. (refined Soda-ash) 48% .. .. .            | nett per ton | 4  | 15 0    |
| (Caustic Soda-ash) 48% .. .. .                  | per ton      | 4  | 5 0     |
| (Carb. Soda-ash) 48% .. .. .                    | per ton      | 4  | 0 0     |
| (Alkali) 58% .. .. .                            | per ton      | 3  | 15 0    |
| (Soda Crystals) .. .. .                         | per ton      | 2  | 0 0     |
| Acetate (ex-ship) .. .. .                       | per cwt.     | 14 | 7 6     |
| Arseniate, 45% .. .. .                          | per lb.      | 15 | 0 0     |
| Chlorate .. .. .                                | per lb.      | 0  | 0 6     |
| Borate (Borax) .. .. .                          | net, per ton | 20 | 0 0     |
| Bichromate .. .. .                              | per lb.      | 0  | 0 3 1/4 |
| Hydrate (77% Caustic Soda) (f.o.b.) net pr. ton | per ton      | 9  | 7 6     |
| (74% Caustic Soda) .. .. .                      | per ton      | 8  | 7 6     |
| (70% Caustic Soda) .. .. .                      | per ton      | 7  | 7 6     |
| (60% Caustic Soda) .. .. .                      | per ton      | 6  | 7 6     |
| (60% Caustic Soda, cream) (f.o.b.) .. .. .      | per ton      | 6  | 7 6     |
| Bicarbonate .. .. .                             | per lb.      | 6  | 10 0    |
| Hypsulphite .. .. .                             | per lb.      | 5  | 10 0    |
| Manganate, 25% .. .. .                          | per lb.      | 15 | 0 0     |
| Nitrate (95%) ex-ship Liverpool .. .. .         | per cwt.     | 0  | 8 0     |
| Nitrite, 98% .. .. .                            | per ton      | 30 | 0 0     |
| Phosphate .. .. .                               | per lb.      | 12 | 15 0    |
| Silicate (glass) .. .. .                        | per ton      | 4  | 10 0    |
| (liquid, 100° Tw.) .. .. .                      | per lb.      | 3  | 10 0    |
| Stannate, 40% .. .. .                           | per cwt.     | 3  | 2 9     |
| Sulphate (Salt-cake) .. .. .                    | per ton      | 1  | 3 6     |
| (Glauber's Salts) .. .. .                       | per lb.      | 1  | 10 0    |
| Sulphide .. .. .                                | per lb.      | 7  | 0 0     |
| Sulphite .. .. .                                | per lb.      | 5  | 15 0    |
| Strontium Hydrate, 100% .. .. .                 | per lb.      | 8  | 0 0     |
| Sulphocyanide Ammonium, 95% .. .. .             | per lb.      | 0  | 0 6 1/4 |
| Barium, 95% .. .. .                             | per lb.      | 0  | 0 4 1/2 |
| Potassium .. .. .                               | per lb.      | 0  | 0 7     |
| Sulphur (Flowers) .. .. .                       | per ton      | 6  | 5 0     |
| (Roll Brimstone) .. .. .                        | per ton      | 5  | 10 0    |
| Brimstone: Best Quality .. .. .                 | per ton      | 3  | 12 6    |
| Superphosphate of Lime (26%) .. .. .            | per ton      | 2  | 17 6    |
| Tallow .. .. .                                  | per lb.      | 19 | 10 0    |
| Tin Crystals .. .. .                            | per lb.      | 0  | 0 5 1/4 |
| English Ingots .. .. .                          | per ton      | 64 | 0 0     |
| Zinc (Spelter) .. .. .                          | per lb.      | 17 | 12 6    |
| Chloride (solution, 100° Tw.) .. .. .           | per lb.      | 5  | 2 6     |



# THE CHEMICAL TRADE JOURNAL AND OIL, PAINT and COLOUR REVIEW.

Publishing Offices: 32, BLACKFRIARS STREET, MANCHESTER.

No. 471.

SATURDAY, MAY 30, 1896.

Vol. XVIII.

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## Notices.

Communications for the *Chemical Trade Journal* should be sent to, and Cheques and Post Office Orders made payable to—**DAVIS BROS., 32, Blackfriars Street, MANCHESTER.**

Our Registered Telegraphic Address is—

"Expert, Manchester."

NATIONAL TELEPHONE 3060.

Terms of Subscription, commencing at any date, to the *Chemical Trade Journal*,—payable in advance,—including postage part of the world, are as follows:—

|                                |          |
|--------------------------------|----------|
| Early (52 numbers) .....       | 12s. 6d. |
| Half-Yearly (26 numbers) ..... | 6s. 6d.  |
| Quarterly (13 numbers) .....   | 3s. 6d.  |

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## CURRENT TOPICS.

### THE SULPHUR INDUSTRY.

THE sulphur industry is one closely connected with the alkali trade, although the use of brimstone has largely been superseded by the introduction of pyrites as a source of sulphur. In the chemical trade as a whole, however, there is still a good deal of vitriol made from brimstone only, since the acid made in this way is considered better than pyrites acid, particularly by mineral water makers, who are always afraid of the arsenic that is well known to be present in pyrites. Even in this direction there have been innovations, spent oxide and recovered sulphur having constituted fresh sources of supply, thereby affecting the quantity that is imported from Sicily.

At the time when these new sources of supply were gaining ground it was generally thought that the Sicilians would be able to make such reductions in price as would keep their competitors in check, and certainly there has been a steady fall in values ever since. This line of action has, however, not been without its adverse effects, and to judge by the state of the industry during the last year, there was good reason to suspect that the end of the tether had been reached.

Efforts have been made to improve matters by combinations to restrict the output, but they have all been to no purpose, and at last the Italian Government has had to give way, and reduce the export duty.

The last straw that seemingly was almost too much for the suffering producers was the discovery of a promising sulphur mine in the United States. Seeing that this is one of the best markets for Sicilian sulphur (pyrites being quite in their infancy, so to speak), this latest development might well have caused consternation among the Sicilian producers.

They have at all events cause to congratulate themselves on one point, and that is the open-handed way their Government have dealt with the matter. Tinkering with the export duty would evidently have afforded no practical relief, and this the Government certainly cannot be said to have done. While they were at it they made such a sweeping reduction that it virtually amounted to abolishing the tax altogether. The old tax was 106d. per ton, which amounted to about 20 per cent. of the selling price in Sicily. Under the new arrangement the trifling duty of 10d. per ton only will have to be paid.

This is all very well for the producers, and, as far as can be seen at present, will, if anything, work to the advantage of the consumer also, as it is very probable that this reduction of duty will lead to an increase in the output, which, in the present state of the market—to put it mildly—will not tend to raise the price.

Whether the Sicilian trade will benefit materially by doing a larger business unless they can keep prices stationary is another matter altogether. As things are at the present moment there is a difference of 5s. per ton between recovered



sulphur and Sicilian, so that they have the start in their favour. It remains to be seen how they will stand at the finish.

#### THE PROSPECTS OF THE AUTO-CAR.

The proceedings of the House of Lords last week have shown pretty conclusively that as far as legislative difficulties are concerned the future of the auto-car is assured. Compared with the delay and discussion that generally attends the alteration of any law bearing on locomotion, the rapidity with which the necessary changes for the introduction of this new type of horseless vehicle have been effected, is phenomenal.

Although no doubt steam, electricity, and gas will all play a part in the development of these new motor carriages their future is of peculiar interest to many, on account of the opening that will be made for the wide extension of oil as a motive power. For these comparatively light purposes there is a great advantage about oil, owing to an oil motor being more self-contained than its rivals. For stationary work there is not much to choose between oil and gas, while as a matter of preference we should be more prone to the latter. It is handy and wants no storing. Where it is a case of a portable motor, however, the comparison is quite different, for here the question of storage is of paramount importance, and even compressed gas comes a long way behind oil, which in the case of an unforeseen accident can be obtained at short notice almost anywhere. In fact it is most certain to be obtainable at those out-of-the-way places where gas and other commodities are unattainable.

There is no need to refer to the drawbacks of steam. Steam carriages are quite feasible, but for ordinary purposes and ordinary persons the oil motor is much more simple and manageable. Electricity is perhaps in a way the simplest of all, but here again the troubles of charging and the necessary charging stations come in. If your power gives out in a quiet country place, with darkness coming on, the impossibility of bringing the charging station to the car, while the car refuses to bring itself within reasonable distance of the station, will be found to be two drawbacks that will militate seriously against the popularity of this particular form of motor. With oil the stock in the reservoir can be seen and appreciated, even by the attendant "tiger," and should his powers of estimation prove deficient, he can have the fact impressed on his mind, by having to beg, borrow, or purchase a fresh supply of oil from the place nearest at hand, and carry the same to the car. There is no need to push the car until the location of the oil is reached.

Opposition is sure to be raised by sentimentalists about the extermination of the good and faithful horse, but it must be remembered that there is no reason to suppose that anything but the drudgery of horse life will be done by auto-cars for a long time to come, so that they ought to be welcomed by those who at present are opposing them. Apart from the noiselessness of traffic, the cleanliness of streets, and the end of the terrors of the asphalt pavement, there is, we think, a most promising future for all connected with oil, in catering for the developments that are sure to attend the spread of oil as a motive power, as soon as the use of auto-cars has been officially legalised. We can only hope that those who are disposed to be indifferent will look to it, and not let such a promising opportunity pass without an effort to benefit by it.

PERSONAL.—Among those who have received birthday honours, we notice the name of Joseph Verdin, Esq., who is so well known in connection with the Cheshire salt trade, and on whom her Majesty has been pleased to confer a baronetcy.

## Legal Intelligence.

### HIGH COURT OF JUSTICE. CHANCERY DIVISION.

(Before Mr. Justice Kekewich.)

THE LANCASHIRE EXPLOSIVES COMPANY (LIMITED) v. THE ROBURITE EXPLOSIVES COMPANY (LIMITED).

THIS was a motion on behalf of the plaintiff company to commit the respondents, Mr. Harris Rigg Wither, the general manager of the defendant company, and Lieutenant-General Sir John Stokes, its chairman, for alleged contempt of court in disobeying an injunction granted by the Court of Appeal on November 12, 1895, restraining the defendants from infringing the plaintiffs' patent of 1885, and for damages. The patent of 1885 (Lamm's patent) was for the manufacture of an improved kind of safety explosive. The invention consisted of taking "two solid substances, a nitrate, as, for instance, nitrate of ammonia, nitrate of potash, nitrate of baryta, or nitrate of soda, and a bi- or tri-nitrate of carburetted hydrogen, such as dinitro-benzene, trinitro-naphthalene, or trinitro-toluol, mixed in such proportions that in the explosion the hydrogen of the carboniferous matter burns to water and its carbon burns to carbonic oxide, or carbonic acid, or a mixture of both. Then the patent went on to describe the manufacture of the above materials into an explosive. This action was commenced in 1894 by the plaintiff company for the purpose of restraining the defendant company from an alleged infringement of the patent, with the result, as above stated, that the Court of Appeal granted the injunction asked. The plaintiff company now alleged that since the order of the Court of Appeal the defendant company had been manufacturing a particular safety explosive called "Roburite No. 3," which, the plaintiffs said, constituted a breach of the injunction, and accordingly the plaintiff company served the defendants' chairman and general manager with a notice of motion as above stated.

Mr. Moulton, Q.C., Mr. Terrell, Q.C., and Mr. Rubie, for the plaintiff company, stated that what was aimed at by the plaintiffs' patent, was the invention of an explosive substance free from the dangers attending explosives—such as nitro-glycerine—which were liable to be exploded either by a blow or shock. What the defendants had now done was, as they admitted, to take the plaintiffs' substances, dinitro-benzene and nitrate of ammonia, being the compounds required to bring about an explosion; but they said they had adopted other and independent methods of manufacture, one of which was the "chlorination" of one of the compounds—dinitro-benzene—by introducing into it a percentage of chlorine. These methods of manufacture were merely a colourable imitation of the plaintiffs' manufacture, and were an infringement of their patent.

Mr. Cripps, Q.C., Mr. R. Wallace, Q.C., and Mr. A. B. Shaw, for the respondents, contended that there had been no infringement of the plaintiffs' patent or breach of the injunction, and read affidavits tending to show that Roburite No. 3—the explosive made by the defendants—was entirely distinct from the plaintiffs' article.

Mr. Justice Kekewich, after a careful review of the processes of the plaintiffs' and defendants' manufactures respectively as shown by the evidence, came to the conclusion that the defendants' explosive was not a colourable imitation of the plaintiffs', and refused the motion, with costs.

### THE PETROLEUM INQUIRY.

IN giving evidence before this committee, last week, Lord Kelvin stated that he had been conversant with the use of paraffin for many years, that illuminant having been in constant use at submarine cable stations since 1858. In 1873 he was engaged in laying cables on the cable ship *Hooper*, off the coast of Brazil, when two accidents occurred on board. The first was caused by the upsetting of a paraffin lamp in the electrical testing-room, the result being that some of the woodwork of the cabin testing-room was burned. The lamp was upset, doubtless by the rolling of the ship, in the absence during the dinner hour of the officer in charge. The second accident, which was probably due to carelessness, was more serious, the blazing paraffin running down into the engine-room and falling on one of the engineers, whose life for some time was despaired of. In consequence of these accidents he had an examination made of all the paraffin on board, and found that, by the open flashpoint, three of the samples flashed at 107°F., while the fourth, which was a special mineral oil, did not flash till 270° was reached. The captain considered the paraffin, except the last, so dangerous in a hot part of the world, with a temperature of from 80° to 100° in the cabin and higher in the engine-room, that he had it thrown overboard. From his experience he was of opinion that 107° Fahr. was much too low for safety, and, unless there was some good reason to the contrary, the sale of paraffin for ordinary use of a lower



nt than 130° open test ought to be prohibited by law. That ended to 103° close test. That 25 per cent. of the deaths by London last year were due to paraffin lamp accidents was, to his regret, asked by the chairman if it was possible to have lamps of any kind in general use without accidents, he said it was possible to have an illuminant which if applied to a combustible should not set it on fire. Mr. Jesse Collings asked the witness the number of accidents did not represent but a small percentage considering the millions of lamps in use. Lord Kelvin replied accidents in general being preventable they ought not to be with any percentage, however small, if the causes were easy of

If possible a standard of 120° Abel close test should be because one could never be sure that the oil in the lamp might be at a temperature of 120°. In reply to Mr. Compton Rickett, Kelvin said he did not think it would be wise to introduce restrictions upon the manufacture and sale of lamps. It was hopeless to introduce safety by legislation at present. The dangerous lamps were not in poor houses but in fine drawing-rooms. Some of those on tall stands with large crystal reservoirs would be very bad accident if they fell over. He attached considerable importance to being able to see the quantity of oil in a lamp by means of a reservoir, but this was more than counterbalanced by the danger of the lamp being knocked over and the glass broken. No doubt a lamp with a reservoir raised the heat more, though not much more, and his suggestion would be an aluminium reservoir with a Röntgen ray to see inside

### THE CHEMISTS' EXHIBITION.

The second of the exhibitions in London organised in connection with the *British and Colonial Druggist* will be held from the 28th August next, at the National Skating Palace, Argyll-terrace, V. For the exhibition of 1895 a larger attendance of the exhibitors of the trade was secured than had ever before assembled on any occasion. In four days it was visited by considerably over a million chemists, by large numbers of London and provincial wholesale manufacturers connected with pharmacy, by hundreds of men, and nearly a thousand nurses, besides thousands of the public. The arrangements which obtained that result will this year be improved and amplified, and an even larger attendance of exhibitors can confidently be expected. The very unusual course of opening a considerable sum out of the revenue of the exhibition to be used in reduction of the railway fares of provincial subscribers to the exhibitors in the *British and Colonial Druggist* so that they have an opportunity to visit the metropolis at fares materially less than the cheapest excursion rates arranged by the railway companies, has again been adopted on an extended scale.

The National Skating Palace, in which the exhibition is to be held, is a spacious hall, very massively built in the form of a modern theatre. The ground floor affords a space of 135 feet by 95 feet available for exhibitors, while above this are two tiers, also giving material for exhibition purposes. The visitors enter from the street to the ground floor, from which a few steps take them either to the ground floor or the upper tier. There are adequate entrances for goods level with the ground floor, space for empties, etc., in a capacious basement, for accommodation. The electric light is profuse, and supplied to the building, which also offers all necessary accommodation for exhibitors and visitors. The entire place will be well appointed, furnished, and decorated in a manner not usual in trade exhibitions. The extensive refrigerating apparatus beneath the building, for the manufacture of ice for skating, will be available, and the temperature in the building can be kept down to any degree desired. It will be supplied every afternoon and evening by a special train.

On the day medical men and nurses will be specially invited, and full notice will be given to exhibitors in order that they may display the articles in which the members of these classes will be immediately interested. A special exhibition number of the *British and Colonial Druggist* will be widely distributed throughout the exhibition. After the exhibition has been held, and will contain a comprehensive description of the exhibition with numerous illustrations, to prevent any misunderstanding it should be noted that this does not form any part of a contract for space, and there is no guarantee to any exhibitor that his exhibit will be described or his stand illustrated. Messrs. A. Elmes and Co., 347, Upper-street, Islington, N., have been appointed official stand fitters, and they are acquainted with the conditions prescribed by the landlords to prevent injury to the building. Exhibitors are at liberty to employ their own fitters, but should impress on them the necessity to avoid giving rise to damage to the building, etc. Arrangements have been made with Messrs. Nicholson and Tyler, of 5, Crown Court, Cheapside, to supply electricity for power, and for the lighting of exhibitors'

own stands where desired. Arrangements with firms to do any work for, or to supply anything to exhibitors, have been made solely for the convenience of exhibitors, the only stipulation with them being that, in the interest of the exhibitors, a moderate uniform rate shall be charged. Refreshments to visitors will be supplied by the National Skating Palace Co. Having regard to the advantages offered in the situation, nature, and appointments of the building, and in the extensive attendance secured (the exceptional methods adopted entailing specially heavy expenses), the tariff for space will be found very moderate. The prices for positions are from 2s. 6d. per square foot, payable half on allotment, and the balance on or before August 17. Exhibitors will be entitled to invitation tickets, available on any day, for the purpose of specially inviting their customers to visit the exhibition. Such tickets will be charged for at the rate of 6s. per dozen; 100, 30s.; per 100, afterwards, 25s. Exhibitors taking 100 tickets, or more, can have their names printed (free) as the donors, if instructions be given at the time of ordering, not later than one month before the opening of the exhibition. A descriptive catalogue will be published, in which advertisements will be inserted at £3. whole page, £1. 15s. half page, and £1. quarter page, payable on publication. Exhibition offices: 42, Bishopsgate Without, London, E.C., and it is requested that communications be addressed to the manager.

### PROSECUTIONS FOR MILK ADULTERATION.

SEVERAL cases involving points of considerable interest under the Food and Drugs Act were heard before Mr. Headlam at the Manchester Police Court last week. In the first case three persons were concerned. An inspector attached to the Sanitary Department of the Town Hall took a sample of the milk sold by Francis Henry Winkup, a small shopkeeper in Gardner-street, West Gorton, and on analysis it was found that the milk had been deprived of fat to the extent of 27%. Winkup, however, declared he sold the milk exactly as he received it from a wholesale milk dealer named Alfred Houchin, of Hyde-road, Gorton. A sample of the latter's milk was taken, and was found to have also been deprived of fat to the extent of 26%. Houchin, in turn, declared that he had sold the milk as he received it from George Hazlehurst, of Blue Slate Farm, Twemlow. Accordingly on different occasions samples were taken of Hazlehurst's milk as it was delivered at Longsight Station. Subsequently two inspectors went to Hazlehurst's farm and asked for a sample of milk as it came from the cows, but Hazlehurst would not allow them to have the milk until after it had passed through the refrigerator. The samples of the milk that had been taken at Longsight Station had, according to the analysis of Mr. C. Estcourt, the city analyst, been deprived of fat to the extent of from 16 to 45%. The analysis of Mr. Charles Blades, a member of the Society of Public Analysts, who had also examined the same samples, produced very different results. Under these circumstances, it was agreed that the summonses against the defendants should be adjourned for a fortnight, to allow of Mr. Estcourt and Mr. Blades making a joint analysis of the samples. Mr. G. Rook prosecuted, Mr. Gilmour appeared for Houchin, and Mr. Fletcher for Hazlehurst. The second case was of a similar character, and the wholesale and retail dealers both declared that they had sold the milk, which had been deprived of fat to a considerable extent, as it had been delivered to them. Accordingly a sample was taken of the milk as it was supplied by Joseph Taylor, of Whitely Green Farm, Adlington, Cheshire, and it was found that fat had been abstracted to the extent of 32%. Mr. Brown, who represented Taylor, contended that the milk dealers had combined to throw all the blame upon the farmers, and he also complained that the inspectors attached to the Sanitary Department of the Town Hall took advantage of "the poor unsophisticated Cheshire farmers." Mr. Headlam fined Taylor £5. and costs. The summonses against the wholesale and retail dealers were withdrawn. Joseph Samuel Shaw, of Egerton-street, Moss Side, was fined £2. and costs for selling milk containing 5% of added water, and for a similar offence Mathew Wild, of Lowestreet, Miles Platting, was likewise found £2. and costs. For selling milk which contained 7½% of added water, Alfred Lord, of Rochdale-road, Harpurhey, was fined 10s. and costs.

THE BLACKLEY CHEMICAL WORKS FATALITY.—In the House of Commons last week, Mr. Schwann asked the Home Secretary whether his attention had been drawn to the case of Henry Bruckshaw, of Hill-lane, Blackley, Lancashire, a night watchman at Levinstein's Chemical Works, Blackley, who, whilst on duty on the 12th of May, fell into a tank of vitriol, and died the same day from the effects of his injuries; and whether he would cause inquiries to be made as to whether the tank was properly protected; if not, as to the responsibility of the owner, and the inspector whose duty it was to protect workmen on the premises. Sir M. White Ridley replied that the inspector had been directed to report on the fact.—(Vide Correspondence Column.—Ed., C.T.J.)



## WOOL OILS.

IN the course of a paper on these oils read before the Society of Dyers and Colourists, Dr. J. Lewkowitsch has contributed many points of interest. He first calls attention to the fact that the term wool oils or cloth oils is not a scientific term. In the trade there are comprised under the name wool oils or cloth oils all those oils that are used by woollen manufacturers for lubricating the wool before spinning or for oiling the rags before grinding and pulling.

We may sub-divide the wool oils into three classes, viz., (a) fatty oils, (b) emulsion oils, (c) solutions of soap.

The following is a list of the *fatty oils* or their products used in the woollen industry: they are arranged in the order of their suitability and quality, commencing with olive oil, which is used for the best kind of wool, and ending with oils consisting in great part of unsaponifiable matter.

Olive (Gallipoli) oil, lard oil, oleine (= oleic acid) [saponification or saponified oleine, distillation or distilled oleine], distilled grease oleine, black recovered oil, "seek oil," and brown [grease] oil.

It will be noticed that no mention is made of mineral oils, mineral oils as such being unsuitable for oiling wools. Of course it is well known that mineral oils are very largely used to adulterate fatty oils intended for the woollen industry; and the number of "manufactured" oils or "blends" is almost legion.

The second class, *emulsion oils*, are chiefly aqueous solution of soda or ammonia, containing larger or smaller quantities of oleic acid soap and mineral oils held in solution by the soap.

The third class of oils, *soap solutions* pure and simple, as represented by solutions of castor oil soap or of a neutral alkali salt of sulphuric-oleic acid, are, as it were, ideal wool oils.

The principles upon which the valuation of wool oils must be based are the following:—In the first instance, wool oils should be *easily removable in the scouring*; they should therefore be free from drying oils, or their fatty acids. For these oils are readily oxidised by the oxygen of the air, and their products of oxidation offer great resistance to the soap solution in the scouring process; and, further, as they become sticky they leave an unpleasant odour on the fabric, and cause stains in the finished cloth. For similar reasons resin products, either as resin oils or resin acids, must be absent. The question whether mineral oils (or at least small quantities thereof) are permissible in wool oils does not seem to have been decided yet in a satisfactory manner.

Mineral oils are mixed with fatty oils simply to cheapen the price. Small quantities of hydrocarbons in the oils for finer goods may not be objectionable as such, the mineral oils readily forming emulsions with the soap solution in the scouring process, and thus being easily removable. The low class oils contain large proportions of hydrocarbons, but even they can be removed with comparative ease, as in the manufacture of the goods for which these oils are employed strongly alkaline soaps are used. Morawski states that even as much as eighty parts of mineral oil yield a complete emulsion with ten parts of a ½% soda solution.

In the author's own opinion mineral oils should not be present in wool oils intended for better class goods.

The fact that the mixing of mineral oils with fatty oils is permitted, leads to fraudulent practices, and as the schedule of the Insurance Companies permit mineral oil, the seller of wool oils exercises his ingenuity in preparing blends readily saleable as long as they conform to the letter of the schedules. Perhaps one of the best arguments against the use of mineral oils, an *argumentum ad hominem*, is afforded by the fact that a shoddy manufacturer will use oils containing mineral oil when he sells the shoddy, whereas he is careful to use saponifiable oils only when he spins the shoddy himself.

In the second instance, wool oils should *develop as little heat as possible*, both in the stored raw material and during the working of the oiled material. Drying oils may easily give rise to a development of heat sufficient to cause spontaneous combustion.

Heat may be also produced in the scribbling and carding process, and the action of free fatty acids on the metal of the scribblers must be taken into account.

Therefore the *flash point* and in general the *liability of an oil to cause a fire*, or to favour the spreading of it, is of the greatest commercial importance. This point will have to be considered, especially as the Fire Insurance offices put great strictures on the users of wool oils, assessing as they do the insurance premium according to the quality of the oil.

It may, therefore, be found useful in this connection to quote the order in which the schedules of the Fire Insurance Companies in this country arrange the oils:—

Free from any extra charge are:—Olive (Gallipoli) oil, lard oil, oleine ("saponified" or "distilled") not containing more than 10 per cent. of unsaponifiable matter, fish oil, or a manufactured oil

("purified by distillation or saponification," whatever this may mean) containing not more than 30% of unsaponifiable matter, and having a flash point of not under 340°F. (167.8°C.).

A higher rate is charged for manufactured oils containing more than 30% but not more than 50% of unsaponifiable matter.

A still higher rate is charged for black (recovered) oil, containing not more than 50% of unsaponifiable matter.

The highest rate is charged for manufactured oils containing more than 50% of unsaponifiable matter, or mineral oil, oil of pine, linseed oil, rape oil, cottonseed oil, or any other seed oil.

The determination of the unsaponifiable matter and of the flash point are, therefore, of the greatest importance in the analysis of wool oils.

But little need be said here about the determination of unsaponifiable matter, as the methods for its determination are well known. It may, however, be useful to again point out that the unsaponifiable matter should not be determined by difference, as is being done by some analysts, who determine saponifiable matter only, returning the unsaponifiable as the difference. Such unsaponifiable matter is then generally called mineral oil, although it may be a solid alcohol, as is the case when wool grease or its distillates are present in the wool oil under examination.

The determination of the flash point hardly calls for any remarks, as this test is well known. Of course, the flash point will be determined by the "open test."

A rapid method for the determination of the liability of oils to spontaneous combustion has not yet been devised. The "Livache" test may perhaps prove useful for this purpose.

A special apparatus for testing wool oils has been described by Richards. This apparatus consists of an outer shell formed by a six-inch wrought-iron tube, which can be closed at each end by discs of wood. Into this tube is inserted an inner four-inch tube of sheet-iron, with overlapping metal covers at each end. Thus there is left an air space of one inch around the inner tube, and of three inches at each end. The whole apparatus is conveniently placed on a tripod, and heated by a Bunsen burner. Three thermometers, which are inserted into the inner shell through the outer one, allow the temperature to be read. To test an oil, 50 grms. are evenly distributed over, say, 10 grms. of cotton waste, and the waste carefully pushed into one end of the inner tube, and a thermometer inserted into the middle of the ball. A second ball of unsoiled waste is placed similarly at the other end of the tube. On heating, the thermometer inserted into this blank waste should not rise above 100°–101°C., which can be easily controlled by the readings of the middle thermometer. The latter should be kept at about 115°C.

During the last few years Mr. Mackey has paid a great deal of attention to the question how best to determine the liability to spontaneous combustion. He has published several papers in the *Journal of the Society of Chemical Industry*, and has designed an apparatus which is less complicated than the apparatus just described. If once generally adopted, uniform results are sure to be obtained.

In conclusion, a number of objections that must be raised to the schedules of the Fire Insurance Companies were pointed out. In the first instance, neatsfoot oil or tallow oil is not allowed, or, at any rate, has been omitted. Surely, if lard oil is allowed, neatsfoot oil should have found a place in the list. This omission seems all the more strange as fish oil is permitted, which the author does not think a safe oil to use.

Reverting to neatsfoot oil, he mentions that in a comparative set of experiments instituted side by side with pure olive oil and with neatsfoot oil he had been able to prove that neatsfoot oil spread over wool causes a smaller rise of temperature than olive oil. Indeed, this seems but in conformity with theory, since olive oil contains several per cent. of fatty acids belonging to a less saturated series than oleic acid, whereas such acids are absent from neatsfoot oil.

The highest rate is charged for cottonseed oil, and quite rightly so, but as fish oil is allowed, one cannot help asking the question how the analyst is to detect cottonseed oil in presence of fish oil, which may be added to any extent according to the first schedule.

The principle on which the charges are based rests on the amount of unsaponifiable matter, and as this is solely tested for, there seems to be a premium placed on the addition of colophony, the resin acids appearing, of course, as so much saponifiable matter. The wool oil merchant has not been slow to see his chance, and the consequence is that we have in the market a number of wool oils containing a considerable amount of resin acids. It is needless to add how objectionable resin acids are in a wool oil.

It is generally known that the Insurance Companies will reply that mineral oils help to spread a fire when once it has started, and that since the new rules have been introduced the number of fires has decreased, but this is an argument of the order of *post hoc ergo propter hoc*, and is bad in logic, for it ignores a host of circumstances which simultaneously led to better qualities of oil being put on the market.



## The Patent List.

*This list is compiled from Official sources in the Manchester Technical Laboratory, under the immediate supervision of George E. Davis and Alfred R. Davis, who report professionally upon the value of Chemical Patents.*

### APPLICATIONS FOR ENGLISH LETTERS PATENT.

- Retorts for the Destructive Distillation of Carbonaceous Material. A. C. Thomson. 9,944. May 11.  
 Using Chlorine and Sulphurous Acid or their Hydrates as Disinfectants. R. N. Lennox. 10,067. May 12.  
 Treating Gold-bearing Antimony Ores. J. Jones. 10,097. May 12.  
 New Fertiliser and Process of Manufacture for same. O. J. Blunden. 10,109. May 12.  
 New Gas Making Retort. J. E. Tolson. 10,177. May 13.  
 Manufacture of Paints, Colours, &c. H. Rudge. 10,181. May 13.  
 Obtaining Caustic Alkalies from Alkaline Aluminates, and Hydrate of Barium and Aluminium from Barium Aluminate. D. A. Peniakoff. 10,252. May 13.  
 Improvements in Tanning. A. Levinstein. 10,263. May 13.  
 Obtaining White Starch from Sorgum. C. Friedbein and A. Rosenheim. 10,330. May 14.  
 Apparatus for the Manufacture of Ozone. E. Andreoli. 10,372. May 14.  
 Improvements in Tanning Apparatus. A. Levinstein. 10,390. May 14.  
 Neutralising Water by Making it Harder or Softer, according to requirement. J. T. Norman. May 15.  
 Manufacture of White Lead. A. H. Sandiland. 10,462. May 15.  
 Extracting Zinc from Ferruginous Liquors, particularly Copper Works Spent Liquors. J. R. Wyld, J. W. Kynaston, and J. Brock. 10,494. May 15.  
 Making High-grade Superphosphates from Low-grade Phosphates, and a Special Drying Oven for use in the Process. E. Cuyllis. 10,574. May 16.  
 Manufacture of Chlorates of Potassium and Sodium. A. Wolf and W. S. Blythe. 10,577. May 16.

### ABSTRACTS OF LATEST COMPLETE SPECIFICATIONS.

*These abstracts are specially prepared for the Chemical Trade Journal, and ALL RIGHTS of publication are RESERVED. This is the earliest series of abstracts of Chemical and allied patents accessible to the public.*

Improvements in and Apparatus for the Manufacture or Production of Ozone. M. Otto, 8, Passage Gourdon, Paris. Eng. Pat. 5,195, March 7, 1896.

The elements consist of very thin perforated sheets of aluminium, tin, zinc, or other suitable metal placed between two plates of glass. These elements are arranged in a box-like container in a zigzag fashion, so that the oxygen or air to be ozonised passes backwards and forwards through the apparatus, finally escaping at an outlet opposite to the entrance. The general arrangement is, therefore, very similar to that usually adopted. The chief novelty attaches to the production of electric "resonance" to effect the production of the ozone. The transformer is operated by an alternating current dynamo. During the operation of the apparatus the armatures (the plates of metal in the elements) are periodically brought to equal potentials and opposite signs, so as to cause an oscillatory discharge, and there is thus produced a very perceptible "resonance," so that sparks can be drawn from all conducting bodies in the vicinity of the apparatus. The shape of the armatures can be varied, as they may be recessed or made in the shape of a grating, the latter form being that represented in the seven figures that are attached to the specification.

Improvements in the Manufacture of Artificial Stone. E. M. Arndt, 53, Frauen Strasse, Stettin, and G. de Bruyn, 48, Hirschgraben, Hamburg. Eng. Pat. 12,242. June 24, 1895.

The idea of converting a mixture of gypsum and caustic lime into a solid mass by treating with sulphuric acid has not been successful in practice. In this invention the desired change is effected by means of sulphurous acid or a sulphite, the change being facilitated by subsequent immersion in hot water. The stone so obtained is said to be unaffected by moisture, and not to undergo chemical change. To carry out the process, cinders, or sand and slag, are stirred up in water with gypsum, and a mixture of milk of lime, sulphite of aluminium, and sulphuric acid added. For the latter a mixture of milk of lime and free sulphurous acid may be substituted. The mass, after well stirring, is poured into moulds, and allowed to set for about a day. It is then treated with hot water, which is either poured on the stone or the latter dipped into the water. The proportions of gypsum, lime, and sulphite of aluminium are varied for certain special purposes, hydraulic lime being substituted for part of the gypsum. The amount of sulphurous acid added depends upon the amount of lime present, the latter being used in smaller quantities, when silicic acid is added. The order in which the materials are mixed is not of importance.

Improvements in the Manufacture of Artificial Stone. W. P. Thomson, 6, Lord-street, Liverpool (communicated by La Société Anonyme La Néo-Litho, of Moll, near Antwerp). Eng. Pat. 3,800. Feb. 19, 1896.

The object is to make artificial marble by treating certain oxides, notably those of aluminium and potassium, with steam under pressure. It is claimed that the finished product is stronger than natural marble and unattacked by acids. To prepare a greyish marble for building purposes, the following mixture is employed:—40% silica, 20% hydraulic lime, 20% alumina, 10% oxide of potassium, and 5% each of quicklime and ferric oxide. These are finely pulverised, bolted, well mixed, and then subjected to the action of high pressure steam in detachable moulds.

Improvements in and Relating to the Manufacture of Solutions of Zinc Chloride and other Metal Chlorides. C. Hoepfner, 2, Helgoländer Ufer, Giessen. Eng. Pat. 3,449. April 29, 1895.

Blende is roasted to remove sulphur, and the resulting oxides treated with sulphurous acid. Any free acid is neutralized and the zinc sulphite decomposed with calcium chloride solution, with the formation of zinc chloride and calcium sulphite. The chloride, after being freed from traces of sulphite and other metalliferous impurities, is electrolysed to form pure zinc and chlorine. The sulphite of lime can be converted into bisulphite, and used in the manufacture of wood pulp. Instead of zinc, other metallic salts, such as chlorides of iron, nickel, and cobalt, can be obtained.

An Improved Means for Treating Sewage and the Like. J. J. Hood and A. G. Salamon, both of 1, Fenchurch-avenue, London. Eng. Pat. 11,297. June 13, 1895.

Weldon mud is employed for the purification of sewage. For this purpose it is used in the wet state, the mud being debased (*i.e.*, the CaO and MnO being removed) according to the requirements of the sewage. For another form of application for dry closets, the calcium chloride is removed, and the mud dried until it assumes the form of a fine dry powder. Even in this state it contains a lot of water, the composition being about 25 parts of MnO<sub>2</sub>, 9 of MnO, 6 of CaO, and 60 of water. The powder is further dried until it has lost about a third of its water. It is then in a state of very fine division, and has the property of absorbing gaseous emanations and deodorising the same in a most striking fashion.

## Selected Correspondence.

### THE FATAL ACCIDENT AT BLACKLEY.

*To the Editor of the Manchester Guardian.*

Sir,—In your issue of the 22nd inst. you report that Mr. Schwann, M.P., asked the Home Secretary questions in regard to the lamentable death of one of our workmen, and whether he would cause inquiries to be made as to whether the tank was properly protected; if not, as to the responsibility of the manager and the inspector, &c. Now we may be wrong, but it appears to us that Mr. Schwann might have saved the time of Parliament if he had taken the trouble to read the proceedings at the inquest, the evidence of witnesses and of the factory inspector, the coroner's remarks, and the verdict of the jury, which are all fully reported in the local papers of the district which he represents. Poor Henry Bruckshaw met his death not by falling into a tank of vitriol, as Mr. Schwann states, but by jumping from a protected stage into a tank containing boiling salt liquor, the stage being three feet higher than the tank. Unfortunately one of the men had taken some of the planks away the night before without replacing them, and Bruckshaw, no doubt believing them to be in their place, fell into the boiling liquor. It was proved at the inquest that proper steps and gangways are provided and all necessary precautions taken to prevent accidents, and that the unfortunate man, for a shorter cut, discarded these precautions, and instead of returning by the proper exit jumped into the tank—Yours, &c.,  
 (For Levinstein, Limited)  
 JOHN WILSON, Secretary.

FORTHCOMING PUBLICATIONS.—Messrs. Macmillan and Co. have just ready for publication an English translation, by Mr. D. E. Jones and Mr. G. A. Schott, of a volume of miscellaneous papers by Heinrich Hertz, the young German physicist, whose remarkable researches in electricity were unhappily cut short by his premature death. This volume contains mainly his earlier investigations, which have hitherto been difficult of access. The introduction by Professor Lenard includes extracts from Hertz's letters to his parents, which throw interesting light upon the course of his scientific development. Professor William Ramsay's book on the gases of the atmosphere, which will contain the first popular account of the discovery of argon, will also be published immediately by Messrs. Macmillan. It will contain portraits of the chief investigators in this branch of physics.



## Reports of Companies.

### SAN JORGE NITRATE CO., LTD.

#### THE WORKING OF THE COMBINE.

At the meeting of this company last week, the chairman (Mr. R. Harvey) made the following interesting statement concerning this company and the working of the Nitrate Combine. He said: I need hardly tell you that had we chosen we could have produced as much nitrate in 1895 as we did in 1890, and have made a correspondingly larger profit, but we preferred economical working to sensational results; we preferred keeping on a steady rate of progress, and at the same time we took advantage of the occasion, and worked out pieces of ground that had been partly worked before—ground which we could work and still make a fair profit at those prices, but which it would not probably have paid to work during a time of restricted output, and in consideration of these measures we have lengthened the life of the officina by working up partially used ground, and we have effected what I am sure we must consider a very splendid result. That we have as good caliche at San Jorge as any which has ever yet been extracted is satisfactorily proved and demonstrated to us by our cable advices for April. Our output for that month was in excess of that of any previous month since the formation of the company, and the cost of production was lower than in any other month for the last two years, notwithstanding the great rise in the Chilean exchange, which would make the manufacture of nitrate much dearer than in the year before. That, I think, is a fact that you should consider highly satisfactory. I venture to believe that very few other nitrate works can speak of their results in the same strain. (Hear, hear.) As you know, the combination for the restriction of the output has been formed, and on the basis of last month, this month, and the following month our quota of production will be fixed for the next three years. We are pleased to be able to tell you that the combination is at last formed, and although it is for a limitation of the output only, yet it will enable us and is enabling us to get the maximum of the profit for a minimum of expenditure on our grounds. At the same time, I must say—and in this my colleagues as well as a great many others who are interested in the nitrate business are with me—that the combination for the limitation of output is not yet a complete combination, because competition in sales still exists, and in order to preclude that all nitrate should be consigned to one central house or to one person, so that all sales should be made through one hand. That would do away with the competition that now exists. Notwithstanding the limitation of output, nitrate to-day is about £8. per ton, and each producer wishes to sell his own production, while £9. per ton could easily be procured were it all sold through one hand, and £11. 00,000. sterling more could be divided amongst the different nitrate-producing companies if that were done.

The combination has limited the output from the month of March, 1896, to March, 1897, to about 20,000,000 quintals, or a little over 1,000,000 tons, and were nitrate at £9. per ton the consumption would be equally as great as at the present time, and nitrate would still be very cheap to the consumer, while we could make, as one of the producers, £1. per ton more than we are doing at present. I merely mention that so that you may know exactly the condition in which the combination for the limitation of the output stands.

### SANTA RITA NITRATE CO., LTD.

The seventh annual general meeting was held last week at Winchester House, Mr. H. W. Lowe presiding. In moving the adoption of the report the chairman stated that for the period under review the net profit, together with the sum brought forward, amounted to £15,176., out of which the board recommended the payment of a dividend of 10 per cent. per annum, leaving £5,546. to be carried forward. The past twelve months had been full of difficulties and anxieties for all associated with the nitrate trade, owing to the low prices and over-production consequent on the lapse of the combination which existed during the preceding three years. In 1894, when the combination was in force, their output was restricted to 13,200 tons, but last year they produced 15,000 tons, and could have turned out a larger quantity had they thought it advisable to do so. Now that the combination had been renewed he thought there should be no difficulty in increasing their profit, and, in the absence of any unforeseen circumstances of an adverse character, the results of the current year's working ought to show a satisfactory improvement. For the moderate price of £25,000. they had acquired the neighbouring officina and grounds of Carolina, which comprised 258 estacas. In order to provide funds for the acquisition of this property and the requisite additional working capital, an issue of £35,000. of 6 per cent. first mortgage debentures, redeemable within ten years had been made. As the result of the purchase in question, it was estimated that the company's output would be considerably increased, combined with a large saving on the present cost of production. Mr. J. M. Clarke seconded the motion, and the report was adopted.

### CONSOLIDATED NITRATE CO., LTD.

The ordinary general meeting was held on Wednesday last week the offices, 43, Lothbury, Mr. Nugent Hargrave presiding. In moving the adoption of the report, the chairman remarked that the result of the past year's working was not so satisfactory as that of the previous year. During the period under review their net production of nit was only about 261,000 quintals, as compared with 462,500 quintals in 1894, and the prices obtainable were also very low. In fact, there had been a crisis in the nitrate trade, but he was pleased to say that they were now looking better. The combination of nitrate producers which had been in force since April 1st last would continue for three years certain, and it might be prolonged indefinitely. A large iodine combination had also been formed on a more solid basis than previous there being no outsiders at the present time, and they therefore expected very successful results in the future. In conclusion, he stated that the board recommended the payment of a balance dividend of 2 per cent. making 5 per cent. for the whole year. Mr. Bowlby seconded the motion. Replying to a shareholder, the chairman said the iodine combination would expire on April 1st, 1897, but unless it was denounced by October 1st next it would go on automatically for 1 years longer. As it was a condition of membership of the nitrate combination that everyone should join the iodine combination, he did not see how it could be denounced. The report, including the dividend therein proposed, was adopted.

### MESSRS. J. C. AND J. FIELD.

The directors, in their report for the year ended March 31st, state that the profits made during the year compare favourably with those of the preceding year, and, after providing for repairs and depreciation of plant and machinery, amount to £20,328. After deducting interest paid and accrued on the debentures, managing director's and directors', trustees', and auditors' fees, and expenses of secret department, there remains a net profit of £16,087., to which has been added £576. brought forward from the last account, making a disposable balance of £16,664. Out of this sum the board recommends payment of a dividend in full on the seven per cent. preference shares and on six per cent. preference shares, and a dividend of 5 per cent. on ordinary shares, free of income tax. Four thousand pounds is written off goodwill, trade marks, &c., and £1,500. is placed to reserve, leaving £591. to be carried forward.

### SAN DONATO NITRATE CO., LTD.

The directors' report for the twelve months ended December 31st states that the profit and loss account shows a net balance of £3,554. Adding the balance from last account, £30,151., and deducting the amount carried to reserve fund, £9,000., and to depreciation fund, £5,000., and the amount of a dividend of 2½ per cent., remains to be carried forward to next account, pending the settlement of the claim against the Chilean Government for \$80,344.50., a balance of £15,706. The directors regret that, owing to the low price of nitrate during the past year and the fact that the officina worked nine months and a half, they are unable to present a favourable balance sheet, or to recommend the payment of a dividend.

#### DIVIDENDS.

*San Sebastian Nitrate Co., Ltd.*—The report for the year ended December 31st, 1895, shows a net profit, including £3,082. brought forward, of £3,594, which is carried forward.

*G. Kynoch and Co., Ltd.*—The Board have resolved:—"Subject to the final audit of the accounts for the financial year ended on April 2nd, 1896, the payment of a dividend at the rate of 10 per cent. per annum on the preference shares, and a dividend at the rate of 13 per cent. per annum on the ordinary shares, both free of income tax be recommended."

**THE DURHAM COAL TRADE COMBINATION.**—It is now officially that the amalgamation scheme in the Durham coal trade has been carried into effect. The undertaking (a Sunderland correspondent writes) is probably the most important ever carried out in the history of the coal trade. By the terms of the transfer the Earl of Durham disposed of the whole of his collieries, fourteen in number, his fleet of steamers numbering nineteen, together with the railways, the plant, and miners' houses, to Messrs. Joicey and Co., Limited. The latter firm are now the owners of 27 collieries and close upon 100 steamers. The production is, approximately, four million tons of coal per annum, and when the steamers are taken into account, the number of hands employed will not fall short of twenty thousand. The head of the firm is Sir James Joicey, M.P. for the Chester-le-Street Division of Durham. The company will now be the largest firm of coalowner and coal shippers in the country, and will exercise a controlling influence in the Durham coal trade. The purchase money has been stated at a million sterling.



## THE VOLUMETRIC ASSAY OF COPPER.

THE following description of a modification of the iodine method of assaying copper, as given by Dr. Peters in his work on modern copper smelting, has been contributed to the *Journal* of the American Chemical Society by Mr. A. H. Low. He says:—

For the most accurate technical work I prefer it to all other methods. For practical work it exceeds the electrolytic method in accuracy, notwithstanding that the latter, when every precaution is taken, is perhaps theoretically more accurate.

### COPPER ASSAY BY THE IODIDE METHOD.

Prepare a solution of sodium hyposulphite containing about 19 grams of the pure crystals to the liter. Standardize as follows: Weigh accurately about 0.200 gram of pure copper foil, and place in a flask of about 250 c.c. capacity. Add 5 c.c. of a mixture of equal volumes of strong nitric acid (1.42 sp. gr.) and water, and thoroughly boil off the red fumes—a very essential point. Now remove from the lamp, and add 6 to 7 grams of crystallized zinc acetate, roughly weighed, and about 15 c.c. of water. Instead of adding the zinc acetate in this way, a cold saturated solution may be kept on hand, and about 20 c.c. taken, the additional 15 c.c. of water being then unnecessary. Heat to boiling for a moment and then cool to ordinary temperature, and dilute to a bulk of about 50 c.c. Now add three grams of potassium iodide and shake it about gently until dissolved. Cuprous iodide will be precipitated and iodine liberated according to the following reaction:  $2(\text{Cu}_2\text{C}_2\text{H}_3\text{O}_6) + 4\text{KI} = \text{Cu}_2\text{I}_2 + 4(\text{K}_2\text{C}_2\text{H}_3\text{O}_6) + 2\text{I}$ . The free iodine colours the mixture brown. Titrate at once with the hyposulphite solution until the brown tinge has become weak and then add sufficient starch liquor to produce a marked blue colouration. Now continue the titration cautiously until the blue tinge has entirely vanished. When almost at the end allow a little time after the addition of each drop to avoid passing the point. One c.c. of the hyposulphite solution will be found to correspond to about 0.005 gram of copper. In the assaying of ores, &c., when half a gram is taken, one c.c. of the standard hyposulphite would then equal about one per cent copper. The reaction between the hyposulphite and the iodine is:  $2(\text{Na}_2\text{S}_2\text{O}_3) + \text{I}_2 = 2\text{NaI} + \text{Na}_2\text{S}_4\text{O}_6$ . Sodium iodide and tetrathionate are formed. The starch liquor may be made by boiling about half a gram of starch with a little water and diluting with hot water to about 250 c.c. It should be used cold and must be prepared frequently for regular work, as it does not keep very well. The hyposulphite solution made of the pure crystals and distilled water appears to be very stable, showing no appreciable variation at the end of a month, when kept under reasonable conditions.

### TREATMENT OF ORES.

Treat half a gram of the ore in a flask of 250 c.c. capacity with five or six c.c. of strong nitric acid and boil gently nearly to dryness. Then add five c.c. of strong hydrochloric acid and again boil. As soon as the incrustated matter has dissolved add five c.c. of strong sulphuric acid and heat strongly, test by manipulating the flask in a holder over a small naked flame, until the more volatile acids are expelled and the fumes of the sulphuric acid are coming off freely. Allow to cool and then add 20 c.c. of cold water and heat the mixture to boiling to thoroughly dissolve any anhydrous sulphates of iron, &c. Now filter to remove more especially any lead sulphate and receive the filtrate in a beaker about two and one-half inches in diameter. Wash the flask and filter with hot water and endeavour to keep the volume of the filtrate down to about 50 or 60 c.c. Place in the beaker two pieces of sheet aluminium, which, for the sake of convenience in subsequent washing, may be prepared as follows: Stout sheet aluminium, say about one sixteenth of an inch in thickness, is cut into pieces an inch and a half square, and then the four corners are bent, for about a quarter of an inch, alternately up and down at right angles. This scheme prevents the pieces from lying flat against each other or upon the bottom of the beaker, and their washing is thus facilitated. The same pieces of aluminium may be used repeatedly, as they are but little attacked each time. Add five c.c. of strong sulphuric acid, cover the beaker and heat to boiling. Boil strongly for about seven minutes. Unless the bulk of the solution is excessive this will be quite sufficient with all percentages of copper. Ordinarily the aluminium will be found to be clean and nearly or quite free from precipitated copper. If, by chance, the copper adheres to any considerable extent, it will usually become loosened by a little additional boiling, or it may be removed by the aid of a glass rod. Transfer the solution back to the original flask, and, by means of a wash bottle of hot water, rinse in also as much of the copper as possible, leaving the aluminium behind. Drain the beaker as completely as possible and temporarily set it aside with the aluminium which may still retain a little copper. Allow the copper in the flask to settle and then decant the liquid through a filter. Again wash the copper similarly two or three times with a little hot water, retaining it as completely as possible in the flask. Finally wash the filter once or twice and endeavour to rinse all metallic particles

down into the point. Now pour upon the aluminium in the beaker five c.c. of a mixture of equal volumes of strong nitric acid (1.42 sp. gr.) and water and warm the beaker gently, but do not heat to boiling, as the aluminium would be thereby unnecessarily attacked. See that any copper present is dissolved and pour the warm solution through the filter last used, thus dissolving any contained particles of copper, and receive the filtrate in the flask containing the main portion of the copper. At this stage do not wash either the aluminium or the filter, but simply remove the flask and set the beaker in its place. Heat the mixture in the flask to boiling, and see that all the copper is dissolved. Then add about half a gram of potassium chlorate and again boil for a moment. This is to oxidise any arsenic present to arsenic acid, and is a very important point. Remove the flask from the lamp and again place it under the funnel and wash the beaker, aluminium and filter with as little hot water as possible. Again boil sufficiently to remove every trace of red fumes. All the copper is now in the flask as nitrate. Add the zinc acetate, and proceed from this point precisely as described with the original nitrate of copper solution in the standardisation of the hyposulphite, finally calculating the percentage of copper present from the amount of standard hyposulphite required. One point, however, remains to be further explained. According to the equation previously given, half a gram of pure copper requires 2.62 grams of potassium iodide. While direct experiment shows this to be apparently true, yet it is found that with small percentages of copper, the reaction, when only the theoretical amount of potassium iodide is taken, is slow, and in fact does not appear to proceed to completion until during the titration, which is thereby unduly prolonged. It is therefore best to use not less than three grams of potassium iodide in any case. An excess does no harm. Silver does not interfere with the method. Lead and bismuth are without effect, except that by forming yellowish iodides they may mask the end-point before adding starch. Lead is practically removed as sulphate at a previous stage. If bismuth is suspected in any appreciable amount, simply add the starch earlier in the titration. Arsenic when oxidised as described has no influence. The return of the blue tinge in the liquid by long standing after titration is of no significance, but a quick return of the colour, which an additional drop or two of the hyposulphite does not permanently destroy, may indicate either an incomplete combination of all the nitric acid with zinc, or a failure to completely boil off the red fumes when dissolving the copper in nitric acid. The assay in such a case is spoiled. This trouble may be avoided by carefully following the directions given and not guessing at strengths or quantities. The amount of zinc acetate recommended is a safe excess. Sodium acetate does not appear to work as satisfactorily.

For the assay of alloys, &c., the necessary modifications of the foregoing scheme are obvious.

The foregoing scheme directs the use of five c.c. of dilute nitric acid for dissolving the copper previous to titration, and prescribes six to seven grams, or about twenty c.c. of a saturated solution of zinc acetate as a safe excess of neutralising agent. It is obvious that if most of the nitric acid be boiled away the amount of zinc salt necessary is greatly reduced. In such a case, however, it is perhaps best, for safety's sake, not to use less than one-half the prescribed quantity. Half the zinc salt may thus be saved at the expense of a little more time. This is the ordinary practice in my own laboratory.

## PROTECTING PETROLEUM TANKS.

THE destruction by fire of the petroleum tank storage at Harburg in May last year has directed attention to the subject of petroleum tanks, and the danger likely to accrue to the community from their situation in inhabited districts. The report on the Harburg fire, drawn up by M. Albrecht, tended, however, to dissipate the alarm at first occasioned by the catastrophe, by bringing to light the fact that the fire was not due to any specific danger inherent to the use of tanks for storage, but to defective appliances whereby a large volume of an explosive mixture of gas and air was enabled—under the favourable atmospheric conditions, viz., absence of wind, prevailing at the time—to collect above the cover of the tanks, and facilitated—or, at least, did nothing to hinder—the passage of flames ensuing, when the mixture was ignited by lightning, into the interior, and so firing the inflammable gaseous mixture existing therein above the surface of the oil.

In considering how similar accidents can be guarded against, Dr. R. Kissling says three main questions arise, viz., how can the tanks be protected against ignition: (1) by lightning (2) by communicated flame from another fire, and (3) how may the danger of explosion be obviated? For the proper understanding and appreciation of the last question it must be recollected that the air space above the oil is filled with a mixture of gaseous hydrocarbons and air, the proportions of which mixture are liable to continual variation from the expulsion of mixed gas and the inflow of air occasioned by the alternate expansion and contraction due to changes of temperature. To return to the protection



of tanks from lightning, it is requisite that an efficient installation of conductors must be provided. This can be carried out most suitably by the erection of four rods about 30 feet long, connected at about 16 feet above the lid of the tank by a copper cable of appropriate diameter; this will divert the course of a flash striking between the vertical rods. The system should be grounded to a network of pipes—gas or water pipes—or else to a copper plate of suitable dimensions sunk in the soil water, particular care being taken that all the connections are sound and protected by an efficient covering to shield them from atmospheric and other influences. The rods, cable and ground plate will, of course, require to be capacious enough properly to conduct the electric current to earth, and the periodical examination of the condition of the installation is absolutely essential, especial care being needed to see that the weak points, viz., the connections, are in thorough working order. Measuring the resistance by means of the ordinary apparatus is not sufficient to detect other than large faults in this respect.

In the second point under consideration, the object in view is the prevention of the transference of flame from the external air into the gas space in the tank, and the most efficient method of effecting this is by making the ventilator tubes of a U form, the longer limb projecting through the edge of the tank lid downwards for a few feet, and being provided with three partitions of fine wire gauze—120 meshes to the square centimetre. This downward direction of the tubes will prevent the accumulation of heavy hydrocarbon gases on the cover of the tank. The ventilators will need to be of large diameter to allow ready escape of air during the filling of the tank, and may conveniently be enlarged at the points where the partitions are inserted, in order to diminish friction.

The efficiency of this method of protective ventilation has been thoroughly tested on a small scale by the author, who found that the evolved gaseous mixture from petroleum heated in a current of air burned quietly away beyond the gauze interceptors, so long as there was gas to consume, but that notwithstanding the varying proportions of the mixture—from saturation with gas down through the various degrees of inflammability and explosibility to attenuation no lighting back behind the gauze occurred.

So far as reducing the effects of an explosion to a minimum is concerned, the chief precaution to be adopted is to make the tank cover as light as possible, and provide a liquid seal—glycerine or similar fluid—at its junction with the body, taking care that the cover cannot be carried away by the wind, and that it is in electrical connection with the lightning conductors.

## Trade Notes.

**NITRATE OF SODA.**—Messrs. Dobell and Co. report:—"Notwithstanding the falling off in the demand during the past few weeks, owing to the continued dry weather, the market has remained very steady. This is no doubt caused by the completion of arrangements to restrict the output for the next three years. Under this agreement, we are to have shipped to Europe about 350,000 tons less this year than the preceding twelve months, but as the visible supply on the 1st of May was 100,000 tons more than last year, this leaves us with a quarter of a million tons less nitrate to meet requirements up to the end of April, 1897. The deliveries so far this year are 80,000 tons in excess of same period in 1895, and, as beet sugar (owing to the Cuban Rebellion) is realising paying figures, we may safely look for at least a demand equal to the past in which case nitrate will most certainly advance. Already considerably higher prices are asked for forward deliveries. Spot Nitrate: White refined quality is now offered, testing about 3% refraction, at £7. 16s. 3d. per ton; good ordinary 4 to 5% refraction, at £7. 15s. per ton free to carriers, usual terms."

**THE CAUCASIAN NAPHTHA INDUSTRY.**—The naphtha industry in the small town of Grosny, in the Terak district, is rapidly developing, and one large firm springs up after another. The necessary pipe for the conveyance of the naphtha to the nearest railway station, which is a distance of 8½ miles, is being constructed, and the demand for Grosny naphtha increases every day. Of the four leading firms the largest is working six bore-holes, but this number will ere long be increased; the second firm is working a couple of bore-holes, and several other large and substantial firms are gradually getting into full swing. Further, the large firm of Nobel and Co. has bought several plots of land in the neighbourhood of Grosny, in order to employ them in the naphtha industry, the installations being already in course of completion. The Wladikowkos Railway Company has also decided to exploit the naphtha industry at Grosny, and a syndicate of Tiflis and Baku capitalists, which some years ago bought several plots of land in the same district, is now about to commence operations. As an example of the astonishing yield of the Grosny borings, one is mentioned which yielded 13,000 tons of naphtha in 24 hours, a figure which has barely been reached even at Baku.—*Engineering.*

**WEEDS AS MANURE.**—In Switzerland a liquid manure is prepared from weeds by making them into heaps and letting them ferment. When they have gone yellow they are watered with weak sulphuric and hydrochloric acids. The resulting juice contains nitrogen, potash, and phosphoric acid.

**LOCAL AUTHORITIES AND FACTORY SEWERS.**—The Master of the Rolls and Lord Justice Smith were occupied several hours last week in hearing an appeal by the Oswaldtwistle Urban District Council from an order of Mr. Justice Kennedy, raising an important point as to the liability of District Councils in reference to making provision for carrying off sewage water from factories. The late Mr. Peebles sought to obtain a *mandamus* against the District Council, requiring them under the Public Health Act of 1875 and the Rivers Pollution Act of 1876 to give him facilities for turning liquid refuse from his manufactory into the sewer. Mr. Peebles dying, Mr. Justice Kennedy, on application to him, ordered that his executors might be joined in the cause as plaintiffs. This was now appealed against by the District Council, on the ground that the action was not for damages, but only to enforce an omission, and the executors could not sue except as representing the estate in damages. The appeal was dismissed, with costs.

**CHEAP ICE CREAMS AND FOUL WATER.**—Mr. F. Durant, chairman of the St. Pancras Public Health Committee, in a report issued the other day states that, upon analysis of three samples of the water in which ice cream glasses were washed, it was found that they contained respectively 4,200,000, 2,150,000, and 5,340,000 putrefaction bacteria per cubic centimetre, as against rarely more than 100 bacteria in a cubic centimetre of good drinking water. Hence, not only were the cheap ice creams vended in the streets, and mostly consumed by juveniles, frequently unwholesome because of the objectionable materials of which they were composed, but the water used by the vendors in connection with their business was very often foul. The St. Pancras Health Committee, having fully investigated the facts of the case over a wide area, hold that the present state of affairs "undoubtedly constitutes a source of danger to the health of the children of the poorer classes, by whom the objectionable ice creams are mainly consumed." The Committee consider that it is clearly necessary to control the street sellers of the ice cream in their occupation, and they have requested the Local Government Board to promote legislation providing for the registration of these ice cream vendors, and for the regulation of the trade by by-laws and proper supervision of the manufacture and supply of ice creams.

## FOREIGN REMITTANCES.

Owing to the inconvenience created by the various ways in which foreign subscriptions are remitted, we respectfully beg to inform subscribers that a *Crossed MONEY ORDER* is the most satisfactory method of remitting, both for them and ourselves. In the case of a Money Order, a letter advising us of same should always be sent, otherwise, owing to post-office formalities, much delay in tracing and acknowledging foreign remittances is inevitably entailed in this country.

## Market Reports.

### TAR AND AMMONIA PRODUCTS.

Benzols continue steady, at 2s. 4½d. for 90's, and 2s. to 2s. 1d. for 50/90's prompt. For July-December, 90's are quoted 2s. 3d. to 2s. 4d. There is no change in carbolic acids; the prices of both 60% crude and 40% crystals remain as last quoted. Crude naphtha stands at 8d., and solvent is the turn better, at 1s. 3d. Anthracene, 30% A, 10½d.; B, 9d. Creosote, 1d. Pitch, 32s. to 32s. 6d., L.A.B. East Coast.

Sulphate of ammonia is firmer, in sympathy with the improved demand which has picked up, notably in forward. There is no spot quotation for Beckton. London outside makes remain at £8. 2s. 6d. Liverpool is now quoted £8. 2s. 6d., Hull £8. 2s. 6d., and Leith £8. to £8. 1s. 3d., the latter being asked by the majority of holders. For forward at Hull £8. 2s. 6d. is being asked.

### REPORT ON MANURE MATERIAL.

Owing to the holidays there is very little doing, and there is nothing particular to report upon. Quotations for mineral phosphates are unchanged, without any fresh business to report. For summer-autumn shipments the value of River Plate bones is about £3. 15s. per ton, delivered, good, U.K. ports, but for large cargo now afloat 2s. 6d. per ton less would no doubt be accepted if bid. Retail business is being done in Bombay bone meal at about £3. 15s. per ton on spot. Nothing further is reported to arrive, but it is understood that prices recently accepted would not now do. Fine crushed Kurrachee bones offer at £3. 17s. 6d. ex quay, without finding buyers. Nitrate of soda is quiet on spot, at 7s. 10½d. per cwt. for ordinary, and 8s. per cwt. for refined.



## ISCELLANEOUS CHEMICAL MARKET.

Business in the alkali trade during the past week has been rather quiet, and prices on the whole remain unchanged. Ammonia alkali, £3. 7s. 6d. per ton, bags, f.o.b. Leblanc soda ash, 1d. to 2d. per degree, in casks, f.o.b. Soda crystals 35s. per ton, bags, f.o.b. For caustic soda there is a demand at the ruling prices, which for spot and forward delivery may be taken as follows:—f.o.b. Liverpool, 77%, £9. 7s. 6d. to £8. 7s. 6d. per ton; 70%, £7. 7s. 6d.; 60%, £6. 7s. 6d. to 10 ton lots upwards. Bleaching powder in fairly good request, at £6. 15s. to £7. per ton, f.o.b. Chlorate of potash quiet, at 4½d. per lb. Soda, 6d. Yellow prussiate of potash is said to be a little firmer at 7½d. per lb. Sulphocyanides unchanged. Sulphate of copper firm f.o.b. There is no change in the position of acetates of lime, grey, and prices are unaltered; values of other acetates continue, but prices are steady. Muriate of ammonia rather easier at 8s. For white powdered arsenic the continued good demand for supply maintains price at £23. to £24. for spot delivery, and forward. Nitrate of soda remains firm at 8s. to 8s. 3d. per cwt. Midlands, owing to the holiday week, business is more or less quiet.

## LIVERPOOL OIL AND COLOUR MARKET.

WEDNESDAY.

—Palm oil is quiet and steady. Business is scarce, small quantity reported in Lagos at £18. 10s. and soft oils £17. 10s. per ton in transit. Olive is steady, and the demand fair considering the price. Linseed is rather dull, with Liverpool at 19s. 6d. to 20s. 6d., in export casks. Cottonseed is quoted at 17s. 3d. for Liverpool refined, and 17s. per cwt. for American. It is steady and unaltered. Tallow is neglected, there being no doing. Resin: Common, 4s. 9d. to 5s.; medium, 5s. to 5s. 1d. fine, 6s. to 7s. 3d. per cwt. Spirits of turpentine steady, but quiet, at 22s. 3d. per cwt. for spot sales. Petroleum: American, 7½d.; Russian refined, 5¾d. per gallon.

OURS.—Prices are steady, and practically without change.

Oxfordshire, common, £10., medium, £12., best, £15. 10s. 6d., common, 40s.; medium, 50s., best, 60s.; Welsh, best, 60s., and common, 18s.; Irish, Devonshire, 40s. to 50s. French, J.C., 65s. Umber: 40s. to 45s. White lead, £16. 10s. unchanged. Venetian red, £6. to £10. Cobalt: Pre-oxidized, 9s. 9d.; black, 9s.; blue, 6s. Oxide of iron: Common, medium, £10.; finest, £20. Zinc oxide, £22. 10s. to £25.

## LIVERPOOL MINERAL MARKET.

During the last week our market has ruled very brisk. Manganese: Stocks are nil; stocks are exhausted, and prices are strong; forward prices are slow, and higher prices are sought. Ground manganese ore, the demand continuing good at £6., £8., £10., and £12. per ton, according to quality. Manganiferous iron ore is in demand. Chrome ore: There have been more arrivals, and prices are steady. Bauxite: The demand continues good, and prices are steady for firsts, 16s. for seconds, and 12s. for third. French chalk: Arrivals have somewhat improved, but we are scarcely keeping pace with the demand, especially for the higher prices for "Angel White" brands are steady at 65s. to 70s., 90s., and 100s. per ton, according to grade, with an upward tendency. Wolfram and scheelite: Stocks are nil; prices considerably advanced, and there is a strong inquiry for forward delivery. Ferro-chromium and ferro-tungsten are unaltered. Arsenic: Demand at full prices, £23. per ton being done for small lots. Emerald is steady at late price, "Emerald" and other brands of emerald at 50s. for lump, 55s. for ground, and 75s. per ton for fine powder. Ochres and umbers remain unaltered, a fair quantity being done at 60s. for J.C. ochre, and 40s. for prime umber. Stone is in more request, prime Teneriffe being done at 10s., Italian lump at £10. 10s., and ground at £6. 10s. per ton. Feiselguhr meets with a steady sale at last prices. Asbestos and mica firm at unaltered prices. Bog ore is steady with alteration in business being done at 22s. 6d. to 25s. per ton. Magnesite sells at prices being somewhat easier. Plumbago is in fair demand at £10. per ton for prime foundries and lubricating qualities. Ceylon being done at £15. to £20. per ton. Carbonate and barytes are quiet. Fluorspar is in quiet demand. Feldspar is quiet. The inquiry for molybdenite, cerite, euxenite, ytterite, etc., is quiet.

## THE METAL MARKET.

LONDON, WEDNESDAY.—Pig iron, nominal: Scotch warran closed at 46s. 10d.; Middlesbrough, 37s. 8d. cash, and hematite, 47s. 8d. Copper, steady: Chili bars, G. O. B.'s and G. M. B.'s, closed at £46. 16s. 3d. to £47. 1s. 3d. cash, and £47. 2s. 6d. to £47. 7s. 6d. three months. Tin, steady: Straits closed at £60. 7s. 6d. to £60. 17s. 6d. cash, and £60. 17s. 6d. to £61. 7s. 6d. three months; Australian, £61. 15s. English ingots, £64. to £64. 10s. Lead, firm: Spanish, £11. 2s. 6d.; English, £11. 5s. to £11. 7s. 6d.; Silesian spelter, ordinary, £17. 13s. 9d. Nickel, 1s. 2½d. Antimony, £30. 5s. Quicksilver, dull: First hands, £6. 15s.; second hands, £6. 14s. Copper shares, steady but quiet: Cape, 2½ to 2½; Copiapó, 2½ to 2½; Libiola, 2¾ to 3; Mason and Barry, 3 to 3¼; Rio Tinto, 21½ to 21½; Tharsis, 5¼ to 5½.

## WEST OF SCOTLAND CHEMICALS.

GLASGOW, TUESDAY.

Since last writing there has been another slight shift of position in sulphate of ammonia, with a fractional price improvement. It can be bought to-day for £8. spot, Leith, but only from a section of the holders, some others of them standing out for £8. 1s. 3d. Disagreement as to forward terms continues, and no business is done. In general chemicals the feeling is very little changed. Rather easier quotations are talked of for bleaching powder, chlorate of potash, and sulphate of copper. Bichromates are unchanged, and at the old rate makers still concede the right of buying two months in advance, a right which is very generally taken advantage of by dealers, who mostly believe there will be a rise eventually. In mineral oils and solid paraffins quietness continues the rule, the present being the slack season; lubricating oils form the exception, being in good demand, especially for the higher grades, although low grade, 865°, is perhaps a shade easier.

Chief prices current are:—Soda crystals, £2. 2s. 6d., nett, Tyne; soda ash, 48/56°, £4. to £4. 15s. nett, Tyne; white alkali, 48/52°, £4. 10s. to £5. nett, Tyne; alum in lump, £5. to £5. 5s. nett, Glasgow; caustic soda, white, 74° £8. 7s. 6d., 70/72° £7. 7s. 6d., 60/62° £6. 7s. 6d., and cream 60/62° £6. 7s. 6d., all nett, Liverpool; bleaching powder, £6. 17s. 6d. nett, Tyne; saltcake, 23s. 6d.; borax, English, refined, £20., and boracic acid, £30. nett, Glasgow; bicarbonate of soda, 5-cwt. casks, £6. 10s., and 1-cwt. casks £6. 15s. nett, Liverpool; bichromate of potash, 4½d. nett, for Scotch and English deliveries (for export, 4¼d. nett, f.o.b. Glasgow); bichromate of soda, 3¼d. nett, for Scotch and English deliveries (for export, 3½d. nett, f.o.b. Glasgow); chlorate of potash, 4½d. less 5%, any port; nitrate of soda, 8s. to 8s. 3d.; sulphate of ammonia, about £8., f.o.b., Leith; sal-ammoniac, first and second white, £39. and £37. nett, any port; sulphate of copper, £18. 17s. 6d. to £19 less 5%, Liverpool; paraffin scale, hard, 1½d. to 1¾d., and soft, 1¾d. to 2d. per lb.; paraffin wax, 120° semi-refined, 2½d. to 2¾d. per lb.; paraffin spirit (naphtha), 7d. per gallon; paraffin oil (burning) No. 1, 6¼d., and crystal, 6½d., at Glasgow and other big centres, for Scotch buyers (English sales ½d. to ¾d. lower); ditto (lubricating) 865° £4. 10s. to £5., 885° £5. 10s. to £6., and 890/895° £6. to £6. 10s. Week's imports of sugar at Greenock were nil.

## TYNE CHEMICAL REPORT.

SATURDAY.

In chemicals the trade is slow, but on the whole steady, with fair shipments. Prices are unaltered. Soda crystals, £2. 2s. 6d. per ton, gross weight, locally. Sulphur is scarce at £3. 17s. 6d. per ton. Caustic, 70%, £7. 10s. to £7. 15s. per ton; 76/77%, £9. 5s. per ton.

Bleaching powder, softs, £7. 5s. per ton, nett; hards, £7. 10s. per ton, nett; caustic soda, 76/77%, £9. 5s. per ton, nett; do., 70%, £7. 15s. per ton, nett; recovered sulphur, 2 cwt. bags, £3. 17s. 6d. per ton, nett; soda ash, 48%, £4. per ton, nett; do., 50%, £4. 3s. 4d. per ton, nett; do., 52%, £4. 6s. 8d. per ton, nett; alkali, 36%, £2. 15s. per ton, nett; white alkali, 48%, £4. 10s. per ton, nett; do., 50%, £4. 15s. per ton, nett; do., 52%, £5. per ton, nett; hyposulphite of soda, 5-7 cwt. casks, £6. 5s. per ton, nett; do., 1 cwt. kegs, £7. per ton, nett; silicate of soda, 75° Tw., £2. 12s. 6d. per ton, nett; do., 100° Tw., £3. per ton, nett; do., 140° Tw., £3. 7s. 6d. per ton, nett; soda crystals, casks, £2. 2s. 6d. per ton, gross weight; do., 2 cwt. bags, £2. 2s. 6d. per ton, nett weight; chlorate of potash, 5d. per lb., less 6%; pearl hardening, £3. per ton, nett; pure white sulphate of alumina, £3. 17s. 6d. per ton, nett; blanc fixe, £7. 5s. per ton, nett; chloride of barium, refined crystals, £6. 15s. per ton, nett; do., 90/95% crude calcined, £6. per ton, nett; sulphide of barium, crystals, £4. 15s. per ton, nett;



carbonate of alumina, £30. per ton, nett; aluminate of soda, £30. per ton, nett.

**SALT.**—There is no change in price, which is quoted at 9s. per ton, f.o.b. Tees, with a strong demand for prompt shipment.

**COALS.**—With the exception of an improved demand for best steam, the market remains practically without alteration. Coke in increased consumption, and very firm:—Best steam coals, 8s. 6d. to 8s. 9d. per ton; second qualities, 7s. 9d. to 8s. per ton; small steam, 3s. 9d. to 4s. per ton; household coals, 10s. to 10s. 6d. per ton; gas coal, 6s. 6d. to 6s. 9d. per ton; Coke, firm, 15s. to 16s.

## HULL PAINT, OIL, AND COLOUR REPORT.

TUESDAY.

**OILS.**—The home demand is only quiet, in anticipation of holidays, which amongst seed crushers and oil refiners will extend until about Wednesday morning. The import of linseed for the week has been 4,531 quarters, from Riga. Linseed oil is quiet at 17s. 9d., naked, spot; June-August and September-December offer at 18s. 1½d.; boiled and refined, £1. to £2. per ton extra. The export for the week has been 2,340 cwt. The import of cottonseed during the week has been 3,763 tons, from Alexandria. Refined cotton oil is dull; spot offers at 14s. 6d., naked; and June-August at 14s. 10½d.; for November-April, business done at 15s. 3d. Crude worth 13s. 1½d., naked; casks £1. and ordinary barrels £1. 10s. per ton extra. The export of refined oil for the week has been 6,100 cwt. Turpentine, 22s. 6d.; olive oil, unchanged; castor oil, 2½d. per lb. for first pressure; cod oil, from £17. to £20. per ton. A cargo of herring oil has arrived here and offers at £14. per ton. Boiled siccative oil, £12. per ton. American cottonseed soap moves freely at £11., in barrels, 70% fatty acids. Locomotive grease, £10. 10s. per ton.

**CAKES.**—Linseed cakes quiet: 95% pure, £5. 12s. 6d.; Americans, £5; Russians, £5. 12s. 6d. Oilcakes, £4. 17s. 6d. Cotton cakes very firm; best makes, £3. 17s. 6d. to £4; seconds, £3. 12s. 6d. to £3. 15s. Rape cakes: Black Sea, £2. 7s. 6d. to £2. 10s.; East India, £3. 7s. 6d. to £3. 10s.

**PAINTS.**—Paint manufacturers continue very busy, many of whom will return to business on Tuesday in order to keep pace with the demand. White lead, £16 10s.; red lead, £14. 10s. to £15. per ton, dry. Various assorted colours in oil range from £11. per ton. Ready mixed paints, in lever tins, from £24. per ton. Dry mineral colours, from £3. 10s. to £8. Paint remover, £1. 5s. to £1. 10s. per cwt. Imperial black varnish, £5. 10s. per ton, in barrels. Varnish stains, from 8s. per gallon. Oak varnish, from 5s. 6d. per gallon.

## New Companies.

**Great Horseless Carriage Co.**—CAPITAL, £750,000., in £10. shares. This company has been formed to make and deal in auto cars, and to trade as engineers, etc. The subscribers to the memorandum of association are: J. Higginbottom, 7, Florence-street, Islington, gentleman; E. Piercy, 20, Fentiman-road, Clapham, clerk; G. G. Hay, Minet Gardens, Harlesden, clerk; F. T. Allen, Chestnut-avenue, Walthamstow, clerk; F. W. Stokes, 38, Clarendon-road,

Walthamstow, clerk; C. A. Robinson, 27, Berners-road, Wood Green, clerk; P. L. D. Perry, 14, Aytoun-road, S.W., clerk.

**Salt Trust, Ltd.**—CAPITAL, £5,000, in £1. shares. This company has been formed to enter into two agreements, and to carry on the business of salt producers, proprietors, and manufacturers.

**Kirk and Gault, Ltd.**—CAPITAL, £20,000. in £10. shares. This company has been formed to carry on the business of wholesale and retail seed and implement merchants, dealers in feeding stuffs, artificial manures, and agricultural requisites, or any other trade or business of like nature. The subscribers are: J. Kirk, Antrim, merchant; J. Gault, Gogry, co. Antrim, farmer; T. McErvel, Victoria-square, Belfast, merchant; J. McErvel, Victoria-square, Belfast, merchant; W. Crawford, Carroureagh, Dundonald, farmer; R. Gault, Academy-street, Belfast, merchant; S. Kirk, Antrim, married woman.

**European Petroleum Co., Ltd.**—CAPITAL, £1,000,000., in £1. shares (500,000 preferred). This company has been formed to adopt an agreement with the Western Trading Co., Ltd., and to produce, refine, store, supply, and distribute petroleum and petroleum products. The subscribers to the memorandum of association are: R. F. Yen, Drayton House, Ealing, solicitor; F. W. Cosham, 59, Dynevor-road, Stoke Newington, clerk; W. B. Butler, 32 Connaught-street, Hyde Park, secretary; P. J. Newton, 29, Evelyn-road, Richmond, gentleman; P. M. Cullen, 38, St. Augustine Villas, Highgate, gentleman; H. Paul, 14, Brailsford-road, Tulse Hill, clerk; W. Farrier, 16, High-street, Homerton, clerk.

**Foster, Blackett, and Wilson, Ltd.**—CAPITAL, £180,000., in £10. shares, of which 5,000 are preference. This company has been formed to acquire the business of lead refiners and desilverisers, red and white lead manufacturers, paint and colour grinders, etc., etc., now carried on at Newcastle-on-Tyne. The subscribers to the memorandum of association are: C. F. Foster, Southill, Chester-le-Street, lead manufacturer; A. J. Foster, Hindley, Stocksfield-on-Tyne, lead manufacturer; Mrs. M. Foster, Hindley, Stocksfield-on-Tyne; M. Forster, Middleham Hall, Ferry Hill, brewer; J. H. Armstrong, St. Nicholas Chambers, Newcastle, C.A.; J. Stanton, Newcastle, solicitor; J. Atkinson, Newcastle, solicitor.

**Nichols' Chemical Co., Ltd.**—CAPITAL, £6,000., in £5. shares. This company has been formed to acquire the business carried on by George W. Nichols, at Short-street Works, Blackburn, and to acquire the sole right to use Wm. Brothers' process for preparing precipitated chalk and sal ammoniac, and to carry on the business of chemical manufacturers, chemists, druggists, etc. The subscribers are: G. W. Nichols, Short-street Works, Blackburn, manufacturer; Mrs. W. Nichols, Warston House, Chatburn; W. Brothers, Higher Clews, Rawtenstall, manufacturer; F. R. Cross, 15, Fulwood Park, Liverpool, broker; Mrs. R. Cross, 15, Fulwood Park, Liverpool; Miss G. B. Fawthrop, 15, Fulwood-park, Liverpool; F. W. Young, Elmsley, Mossley Hill, near Liverpool, merchant.

## Gazette Notices.

BANKRUPTCY ACTS, 1883 and 1890.

Adjudications.

BRISCOE, R. C., New Broad-street, E.C., and Liverpool, explosives merchant.  
ARDEN, F. V., Crumpsall and Cockpit Hill, Manchester, drysalter and oil merchant.

## IMPORTS OF CHEMICAL PRODUCTS

AT

### THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

#### LONDON.

Week ending May 16th.

|                            |                      |
|----------------------------|----------------------|
| <b>Acetanilide</b> —       |                      |
| Holland, 5 cs.             | F. Boehm             |
| <b>Acetic Acid</b> —       |                      |
| Holland, 285 pks.          | A. & M. Zimmermann   |
| <b>Albumen</b> —           |                      |
| France, £60                | Mory & Co.           |
| <b>Alum</b> —              |                      |
| Holland, 10 cks.           | W. Burton & Sons     |
| Belgium, 13                | R. W. Greeff & Co.   |
| <b>Aluminium</b> —         |                      |
| Holland, £10               | Davies, Turner & Co. |
| <b>Ammonium Chloride</b> — |                      |
| Germany, 3 cks.            | B. W. Harria         |
| " 3                        | F. Boehm             |

|                             |                            |
|-----------------------------|----------------------------|
| <b>Ammonium Phosphate</b> — |                            |
| Holland, 9 cks.             | Cheml. Wks., Ldn. Agency   |
| <b>Antimony Ore</b> —       |                            |
| Portugal, 50 t.             | J. Bamber                  |
| <b>Arsenic</b> —            |                            |
| Germany, 4 kgs.             | W. J. Crook                |
| <b>Asbestos</b> —           |                            |
| Italy, £220                 | Brit. Asbestos Co.         |
| France, 15                  | Girard Frs. & Co.          |
| Italy, 350                  | Pickford & Co.             |
| Holland, 9                  | G. Rahn & Co.              |
| U. States, 45               | W. Byford                  |
| Italy, 75                   | London Asbestos Co.        |
| <b>Barytes</b> —            |                            |
| Belgium, 66 cks.            | Soundy & Sons              |
| " 109                       | J. L. Lyon & Co.           |
| Holland, 22                 | 100 bgs. D. Harrison & Co. |
| " 43                        | E. J. Diggins              |
| " 22                        | O'Hara & Hoar              |

|                           |                            |
|---------------------------|----------------------------|
| Belgium, 161              | W. Harrison & Co.          |
| " 35                      | Fleming's Oil & Cheml. Co. |
| Germany, 19               | E. J. Diggins              |
| " 161                     | W. Harrison & Co.          |
| Belgium, 68               | Perkins & Homer            |
| <b>Bleaching Powder</b> — |                            |
| Germany, 100 cs.          | H. Lambert                 |
| <b>Bone Meal</b> —        |                            |
| E. Indies, 242 t.         | Fox, Roy & Co.             |
| " 100                     | A. Hunter & Co.            |
| <b>Bromide of Iron</b> —  |                            |
| Germany, 5 cks.           | A. & M. Zimmermann         |
| <b>Bromine</b> —          |                            |
| Germany, 20 cs.           | A. & M. Zimmermann         |
| <b>Camphor</b> —          |                            |
| Hong Kong, 101 cs.        | Eastwood & Holt            |
| <b>Caoutchouc</b> —       |                            |
| E. Indies, 78 c.          | Ross & Deering             |

|                        |                       |
|------------------------|-----------------------|
| Natal, 2               | Hale & Son            |
| Germany, 40            | Prop. Bull W.         |
| " 80                   | Wallace Br.           |
| " 82                   | Andersen, Weber & Co. |
| E. Indies, 19          | Ralli Br.             |
| Madagascar, 41         | Procter Br.           |
| Algoa Bay, 80          | Hammond & Co.         |
| Zanzibar, 17           | Hale & Son            |
| Madagascar, 5          | Kleinwort. Sons & Co. |
| Zanzibar, 26           | L. & I. D. Jt. Co.    |
| Singapore, 204         | W. Pope & Co.         |
| E. Indies, 25          | L. & I. D. Jt. Co.    |
| U. States, 25          | Stiebel Br.           |
| <b>Carbonic Acid</b> — |                       |
| Germany, 56 pks        | Krayer, Ball & Co.    |
| <b>Castor Oil</b> —    |                       |
| E. Indies, 100 cs.     | Andersen              |
| France, 30 brls.       | Weber & Co.           |
|                        | R. G. Hall & Co.      |



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| <b>Caustic Potash—</b><br>France, 25 drs. J. Barber & Co.<br><b>Chemicals—</b> otherwise under. —<br>Germany, 4243 T. H. Lee<br>" 65 Philipps & Graves<br>France, 73 Flageollet & Co.<br>Holland, 50 T. H. Lee<br>Germany, 48 Craven & Co.<br>" 325 A. & M. Zimmermann<br>France, 9 Zinnemann<br>Belgium, 142 Mory & Co.<br>Holland, 8 T. Palmer<br>" R. W. Greeff & Co.<br>U. States, 2,835 C. Lock<br>Germany, 7 W. J. Crook<br>" 15 Stobbs, Wilson & Co.<br>France, 40 Mess Parisiennes<br>" 10 Hernu, Peron & Co.<br>Holland, 7 F. Claydon & Co.<br>" 23 Hernu, Peron & Co.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <b>Glue—</b><br>" 25 143 Ohlenschlager<br>" 520 620 L. & I. D. Jt. Co.<br>" 500 500 Deering & Robottom<br>" 500 500 E. Dixon<br>" 050 1,325 T. M. Duché & Sons<br>" 50 300 E. & T. Pink<br>" 3,020 8,415 R. G. Hall & Co.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <b>Saltpetre—</b><br>Germany, 20 cks. P. Hecker & Co.<br>" 15 Petri Bks.<br>E Indies, 537 bgs. Lucas & Spencer's<br>" 2,156 Perkins & Homer<br><b>Silla—</b><br>Germany, 450 A. Haacke & Co.<br><b>Soda Ash—</b><br>Germany, 1,000 c. R. Waters<br><b>Sodium Acetate—</b><br>Belgium, 15 cks. H. Lorenz<br>France, 30 "<br><b>Sodium Bicarbonate—</b><br>Holland, 20 c. A. & M. Zimmermann<br>" 10 J. Barber & Co.<br><b>Sodium Hyposulphite—</b><br>Holland, 100 pks. F. C. Devon & Co.<br><b>Sodium Nitrate—</b><br>Holland, 7 cks. Philipps & Graves<br><b>Starch—</b><br>Belgium, 20 cs T. Ronaldson & Co.<br>Germany, 480 Horne & Co.<br>Holland, 600 Vokins & Co.<br>" 130 Hernu, Peron, & Co.<br>" 533 Little & Johnston<br>France, 510 E. & T. Pink<br>Belgium, 630 F. Claydon & Co.<br>Holland, 238 Philipps & Graves<br>Germany, 340 W. France & Co.<br>Belgium, 66 T. H. Lee<br>Holland, 40 "<br>" 169 "                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <b>Albumen—</b><br>Marseilles, 10 cs<br><b>Alum in Cake—</b><br>Rotterdam, 92 cks.<br><b>Antimony Sulphate—</b><br>Marseilles, 17 brls.<br><b>Asbestos—</b><br>New York, 1 bg.<br><b>Barytes—</b><br>Rotterdam, 22 cks.<br>Antwerp, 14 "<br><b>Bone Ash—</b><br>Cair. pana, 623 bgs.<br>B. Ayres, 240 W. B. Dickinson<br>" 90 H. Brown<br><b>Bone Meal—</b><br>Calcutta, 1,120 bgs.<br>Bombay, 9,035 "<br><b>Borax—</b><br>Galveston, 319 t. Balfour<br>" 982 sks. Williamson<br>Mollendo, 926 A. & S. Henry & Co.<br><b>Caoutchouc—</b><br>Havre, 7 cks. 55 cs. Cunard<br>" S. S. Co.<br><b>Caster Oil—</b><br>Amsterdam, 499 cs. Ralli Bks.<br>Calcutta, 717 Petrocochino Bks.<br>" 250 "<br>Genoa, 375 "<br>Marseilles, 60 30 brls. R. J. Francis & Co.<br>" 2 G. Meadowcroft & Co.<br>" 30 cks. 176 brls.<br>Leghorn, 15 "<br><b>Colours—</b><br>Antwerp, 2 cks. 3 cs.<br>Rotterdam, 2 "<br>Ghent, 20 8 J. T. Fletcher & Co.<br><b>Cream of Tartar—</b><br>Marseilles, 6 brls. 3 cks.<br><b>Dextrine—</b><br>Stettin, 25 bgs.<br><b>Dried Blood—</b><br>Marseilles, 2 cs. R. J. Francis & Co.<br>Campana, 307 bgs.<br><b>Dyestuffs—</b><br>Cutch<br>Singapore, 47 bxs.<br>Calcutta, 100 "<br><b>Extracts</b><br>Marseilles, 138 cks.<br>New York, 18 E. M. Schweich<br>Genoa, 25 "<br>Philadelphia, 100 bxs<br><b>Gambler</b><br>Singapore, 478 bls. 817 bgs.<br>New York, 20 t.<br>Jamaica, 216 14 c.<br><b>Myrabolams</b><br>Bombay, 7,107 bgs.<br><b>Orchelia</b><br>Lisbon, 68 bls. A. Barboza & Co.<br><b>Saffron</b><br>Valencia, 6 cs.<br><b>Shumac</b><br>Palermo, 575 bgs. 45 bls.<br><b>Turmeric</b><br>Calcutta, 8 bgs.<br>Bombay, 47 "<br><b>Valonia</b><br>Havre, 1,123 sks. Cunard S.S. Co., Ltd.<br><b>Farina—</b><br>Stettin, 150 bgs.<br>Fiume, 145 "<br>Stettin, 6,250 Brown, Geveke & Co.<br><b>Glucose—</b><br>New York, 693 brls.<br>Hamburg, 50 cks.<br>Boston, 200 "<br><b>Glue—</b><br>Rotterdam, 40 bgs. 20 cs.<br>Hamburg, 20 "<br>Rouen, 25 cks.<br>Antwerp, 1 "<br>Boston, 2 The Wells Co., Ltd. |
| <b>Cream of Tartar—</b><br>Portugal, 5 cks. B. & F. Wf. Co.<br>Spain, 23 "<br>" 3 F. C. Devon & Co.<br>France, 5 M. Ashty Ltd.<br>" 15 W. C. Bacon & Co.<br>" 1 F. C. Devon & Co.<br>" 5 B. & F. Wf. Co.<br>Italy, 22 B. Jacob & Sons<br>" 21 Howard & Sons<br>Spain, 5 W. C. Bacon & Co.<br><b>Dextrine—</b><br>Germany, 100 bgs. Seaward Bks.<br>France, 25 J. W. Drysdale & Co.<br><b>Dyestuffs—</b><br>Argols<br>Italy, 749 bgs. B. Jacob & Sons<br>Cape, 12 J. R. Thomson & Co.<br>Italy, 250 Thames S. T. & L. Co.<br><b>Cochineal</b><br>Canaries, 10 bgs.<br><b>Cutch</b><br>Rangoon, 20 cs. Hoare, Wilson & Co.<br><b>Divi Divi</b><br>Japan, 140 bgs. L. & I. D. Jt. Co.<br>E. Indies, 360 Walker, Munsie & Co.<br><b>Extracts</b><br>Denmark, 2 brls. M. D. Co.<br>France, 110 cs. Bennett S. S. Co.<br>" 30 cks. L. J. Levinstein & Sons<br>Germany, 100 bgs. J. Knill & Co.<br>France, 100 B. & F. Wf. Co.<br>" 35 Union L. Co.<br><b>Gambler</b><br>Singapore, 234 bls. Union L. Co.<br>" 912 Nat. S. S. Co.<br><b>Indigo</b><br>E. Indies, 23 chts. Forbes, Forbes & Co.<br>" 14 Gray, Dawes & Co.<br>" 16 R. von Glehn & Sons<br>" 17 Park Macfadyen & Co.<br>" 16 Croysdale & Co.<br>" 6 Walker, Munsie, & Co.<br>" 14 Elkan & Co.<br>" 44 J. Owen<br>" 9 F. Claydon & Co.<br>" 4 Parsons & Keith<br>" 108 L. & I. D. Jt. Co.<br><b>Saffron</b><br>Spain, 1 cs. J. H. Fox & Co.<br>" 1 W. J. Bush & Co.<br>" 3 Richardson, Spence & Co.<br>" 1 J. Knill & Co.<br><b>Shumac</b><br>Italy, 1,900 bgs. Bevington & Sons<br>" 500 McDougall & Bonthron<br>" 100 pks. Clark, Gray & Co.<br><b>Tanners' Bark</b><br>Natal, 50 t. Boucher, Mortimore & Co.<br>Belgium, 21 Sawyer, Sons & Co.<br>" 43 Leach & Co.<br><b>Arina—</b><br>Germany, 50 bgs. Dunlop Bks.<br>Holland, 100 Seaward Bks.<br>" 100 J. Barber & Co.<br><b>Lucose—</b><br>U. States, 500 pks. 500 c. Fellows, Morton, & Co.<br>Belgium, 350 90 L. Sutro & Co.<br>" 50 100 J. Burnett & Sons<br>U. States, 50 200 J. T. Morton<br>" 500 500 Trier, Meyer, & Co. | <b>Infusorial Earth—</b><br>Germany, 470 Drolenvaux & Co.<br><b>Lamp Black</b><br>U. States, 50 hds. J. Melvin<br><b>Lead Acetate—</b><br>Germany, 10 cks. R. W. Greeff & Co.<br><b>Litharge—</b><br>Holland, 18 cks. H. Wallace & Co.<br><b>Lithopone—</b><br>Holland, 40 cks. D. Storer & Sons<br><b>Manganese—</b><br>E. Indies, 40 t. L. & I. D. Jt. Co.<br>" 300 Sawyer, Sons, & Co.<br><b>Manure—</b><br>Cape Town, 2 t. Hammond & Co.<br><b>Metallic Oxide—</b><br>Germany, 8 cks. Brit. Anti-Fouling Co. Co.<br><b>Methyl Alcohol—</b><br>Germany, 9 dms. Stein Bks.<br>" 21 McNamara & Co.<br><b>Mica—</b><br>E. Indies, 460 W. M. Smith & Sons<br>" 48 F. Claydon & Co.<br>Germany, 80 Elkan & Co.<br>" 40 G. & H. Green<br><b>Mineral White—</b><br>Austria, 100 bgs. Stobbs, Wilson, & Co.<br><b>Molasses—</b><br>U. States, 312 cks. 1,710 c. Deering & Robottom<br>Egypt, 40,000 c. J. R. Francis & Co.<br><b>Nickel Sulphate—</b><br>Germany, 4 cks. Petri Bks.<br><b>Ochre—</b><br>U. States, 80 brls. A. E. Piggott<br>Holland, 20 cks. Philipps & Graves<br><b>Phosphate of Lime—</b><br>France, 330 t. A. Hunter & Co.<br><b>Phosphate Rock—</b><br>France, 100 t. J. Burnett & Sons<br>U. States, 500 A. Hunter & Co.<br>" 2,380 Anglo-Contl. G. Wks. Chemical Works—<br>Belgium, 50 London Agency<br><b>Plumbago—</b><br>Germany, 119 cks. B. Gallaway<br>Ceylon, 100 Doulton & Co.<br>Germany, 19 J. Thredder, Son, & Co.<br><b>Potash—</b><br>U. States, 10 brls. Union L. Co.<br>" 10 L. & I. D. Jt. Co.<br><b>Potash Bleaching Powder—</b><br>Holland, 13 cks. R. W. Greeff & Co.<br><b>Potassium Bicarbonate—</b><br>Holland, 25 c. A. & M. Zimmermann<br><b>Potassium Carbonate—</b><br>France, 65 c. Petri Bks.<br>Germany, 93 Spies Bks. & Co.<br>" 97 Beresford & Co.<br><b>Potassium Chloride—</b><br>Germany, 510 cks. Bessler, Waechter, & Co.<br><b>Potassium Oxalate—</b><br>Holland, 14 cks. R. W. Greeff & Co.<br><b>Potassium Oxymuriate—</b><br>Sweden, 20 kgs. G. Boor & Co.<br><b>Potassium Prussiate—</b><br>Holland, 1 ck. J. Owen<br><b>Potassium Su phate—</b><br>Spain, 20 b.s. J. Burstall & Co.<br><b>Pumice Stone—</b><br>Italy, 12 t. B. Gallaway<br>" 18 F. Claydon & Co.<br>" 8 Stobbs, Wilson, & Co.<br>" 11 O'Hara & Hoar<br>" 1 10 c. Beck & Pollitzer<br>" 1 Burrell & Co.<br><b>Quicksilver—</b><br>Italy, 1,250 btl. L. & I. D. Jt. Co.<br><b>Rosin—</b><br>France, 24 brls. W. Harrison & Co. | <b>Sulphur—</b><br>Italy, 100 t. B. Jacob & Sons<br>" 1,000 W. C. Bacon & Co.<br>" 5 F. & L. Sittler<br>" 25 F. C. Devon & Co.<br>" 92 G. Boor & Co.<br>" 25 K. Waters<br>" 25 Co-op Lightgr. Association<br>" 5 A. Hunter & Co.<br>" 20 Clark, Gray, & Co.<br>" 12 J. Puddy & Co.<br>" 6 A. Carey<br>" 10 F. Smith<br>" 20 J. Greig<br><b>Ultramarine—</b><br>Germany, 25 cs. Steinhoff, Sons, & Co.<br>Holland, 2 cks. G. Rahn & Co.<br><b>Varnish—</b><br>U. States, 35 pks. Lunham & Moore<br>" 5 Dawson Bks.<br><b>White Lead—</b><br>Holland, 20 cks. E. J. Diggins<br>" 63 Burrell & Co.<br>" 50 T. & W. Farmiloe<br>Germany, 1 H. Lambert<br>Belgium, 95 T. & W. Farmiloe<br>" 38 D. Storer & Sons<br>" 20 Burrell & Co.<br>Holland, 24 A. Zumbek & Co.<br><b>Wood Pulp—</b><br>Norway, 12 cks. Henderson, Craig, & Co.<br>Germany, 48 L. & I. D. Jt. Co.<br>Sweden, 56 Henderson, Craig, & Co.<br>" 320 W. G. Taylor & Co.<br>Belgium, 1,091 E. J. & W. Goldsmith<br>Sweden, 250 "<br>Norway, 240 W. G. Taylor & Co.<br>" 1,000 Christophersen & Co.<br>Germany, 10 Craven & Co.<br>" 50 H. C. Everett<br>Sweden, 250 Tough & Henderson<br>" 81 W. D. Cork<br>Norway, 300 W. E. Bott & Co.<br>" 104 Johnson & Jorgensen<br>Germany, 104 Moreton Cox Bks<br>Holland, 510 Philipps & G.<br>" 12 G. Rahn & Co.<br>Norway, 200 C. S. Lovell<br><b>Zinc Oxide—</b><br>Holland, 100 brls. M. Ashby, Ltd.<br>Germany, 75 cks. J. Matton<br><b>LIVERPOOL.</b><br>Week ending May 14th.<br><b>Acetic Acid—</b><br>Rotterdam, 300 cs. |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |



|                                                                                                       |                                                                                         |                                                                                                |                                                                                                                                                                                         |
|-------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Limestone</b> —<br>Antwerp, 1 crt. J. T. Fletcher & Co.                                            | <b>White Lead</b> —<br>Rotterdam, 54 cks.<br>Antwerp, 20                                | Hamburg, 140 cs. 20 cks.<br>Ghent, 36                                                          | Ghent, 100 cs.<br>Haringen, 200 bgs. Hutchinson & Son                                                                                                                                   |
| <b>Manganese Ore</b> —<br>Stratoni, 2,679 t. Wigan Coal & Iron Co.                                    | <b>Wood Pulp</b> —<br>Rotterdam, 122 bls.                                               | <b>Stearine</b> —<br>Rotterdam, 8 cs.                                                          | <b>Glucose</b> —<br>Stettin, 314 pks. Wilson, Sons, & Co., Ltd.                                                                                                                         |
| <b>Manure</b> —<br>Philadelphia, 70 bgs.                                                              | <b>Zinc Oxide</b> —<br>Stettin, 50 cks.<br>New York, 50 brls.                           | <b>Sulphuric Acid</b> —<br>Rotterdam, 10 dms.                                                  | Boston, 200 brls.<br>New York, 150                                                                                                                                                      |
| <b>Mineral White</b> —<br>Fiume, 100 bgs.                                                             | <b>Zinc White</b> —<br>Rotterdam, 25 60                                                 | <b>Tallow</b> —<br>New York, 20 hds.                                                           | <b>Glue</b> —<br>Antwerp, 3 cks. Bailey & Leatham                                                                                                                                       |
| <b>Ochre</b> —<br>Marseilles, 111 cks. 235 cs.<br>Rouen, 64 R. J. Francis & Co.                       | <b>Zinc White</b> —<br>Rotterdam, 150 cks.                                              | <b>Tartaric Acid</b> —<br>Rotterdam, 42 cks.                                                   | " 5 cs. 6 pks. Wilson, Sons, & Co., Ltd.                                                                                                                                                |
| <b>Paint</b> —<br>Rotterdam, 1 dm.                                                                    | <b>MANCHESTER.</b><br>Week ending May 16th.                                             |                                                                                                | Rouen, 60<br>25 cks. Rawson & Robinson<br>Dunkirk, 99 Sons, & Co., Ltd.                                                                                                                 |
| <b>Paraffin Scale</b> —<br>New York, 953 brls. Thompson & Bedford                                     | <b>Albumen</b> —<br>Hamburg, 6 cks.                                                     | <b>Wood Pulp</b> —<br>Rotterdam, 206 bls.<br>Christiania, 2,080<br>Gothenburg, 2,787           | <b>Limestone</b> —<br>Antwerp, 1 crt. Wilson, Sons, & Co., Ltd.                                                                                                                         |
| Baltimore, 100                                                                                        | <b>Aluminous Cake</b> —<br>Rotterdam, 78 cks.                                           | <b>Zinc Oxide</b> —<br>Rotterdam, 35 brls.                                                     | <b>Ochre</b> —<br>Rouen, 4 cks. Rawson & Robinson                                                                                                                                       |
| Philadelphia, 100                                                                                     | <b>Ammonia</b> —<br>New York, 50 cyldrs. 50 cs.                                         | <b>Zinc White</b> —<br>Rotterdam, 15 cks.                                                      | <b>Paint</b> —<br>New York, 23 cs. Wilson, Sons, & Co., Ltd.                                                                                                                            |
| <b>Phosphate</b> —<br>Terneuzen, 320 t. T. Vickers & Son                                              | <b>Barium Chlorate</b> —<br>Rotterdam, 12 cks.                                          | <b>HULL.</b><br>Week ending May 16th.                                                          |                                                                                                                                                                                         |
| <b>Pitch</b> —<br>Marseilles, 132 brls.                                                               | <b>Barytes</b> —<br>Antwerp, 50 bgs.                                                    | <b>Acids</b> —<br>Leghorn, 22 cks. Wilson, Sons, & Co., Ltd.                                   | Boston, 13                                                                                                                                                                              |
| <b>Plumbago</b> —<br>Genoa, 300 bgs.                                                                  | <b>Carbolic Acid</b> —<br>Rotterdam, 25 cks.                                            | <b>Alkali</b> —<br>Bremen, 3 cs. 2 kgs. Veltmann & Co.                                         | <b>Phosphate</b> —<br>Ghent, 1,020 bgs.<br>Dunkirk, 1,015 Wilson, Sons, & Co., Ltd.                                                                                                     |
| <b>Potash</b> —<br>Dunkirk, 20 cks.                                                                   | <b>Castor Oil</b> —<br>Antwerp, 28 brls.                                                | <b>Arsenic</b> —<br>Hamburg, 15 brls. Wilson, Sons, & Co., Ltd.                                | Antwerp, 50 t. "                                                                                                                                                                        |
| <b>Pumice Stone</b> —<br>Leghorn, 100 bgs. J. B. Wood                                                 | <b>Caustic Potash</b> —<br>Hamburg, 17 cks.                                             | <b>Asbestos</b> —<br>Genoa, 8 cs.                                                              | <b>Pitch</b> —<br>Antwerp, 9 cks.                                                                                                                                                       |
| <b>Pyrites</b> —<br>Huelva, 3,237 t. Matheson & Co.                                                   | <b>Chemicals (otherwise undescribed)</b><br>Rotterdam, 2 brls.                          | <b>Barytes</b> —<br>Antwerp, 51 cks. Bailey & Leatham                                          | <b>Plumbago</b> —<br>Leghorn, 250 bgs.<br>Genoa, 3 cks. Wilson, Sons, & Co., Ltd.                                                                                                       |
| <b>Rosin</b> —<br>New York, 1,167 brls.                                                               | <b>Colours</b> —<br>Rotterdam, 39 cks. 32 cs. 115 brls.<br>20 bxs.                      | " 173 H. F. Pudsey<br>Rotterdam, 118 Hutchinson & Son<br>Bremen, 37 G. Holmes & Co.<br>40      | <b>Potash</b> —<br>Hamburg, 20 dms. Hutchinson & Son                                                                                                                                    |
| <b>Salicylic Acid</b> —<br>Hamburg, 1 cs.                                                             | Hamburg, 1 4 6                                                                          | <b>Bone Meal</b> —<br>Bombay, 1,000 bgs.                                                       | " 20<br>Antwerp, 57 pks. Wilson, Sons, & Co., Ltd.                                                                                                                                      |
| <b>Salt</b> —<br>Alexandria, 6 bgs.                                                                   | Ghent, 9 5                                                                              | <b>Chemicals (otherwise undescribed)</b><br>Stettin, 28 cks. Wilson, Sons, & Co., Ltd.         | <b>Pumice Stone</b> —<br>Leghorn, 15 pks. Wilson, Sons, & Co., Ltd.                                                                                                                     |
| <b>Saltpetre</b> —<br>Calcutta, 1,036 bgs. Ralli Bros.<br>655                                         | <b>Cottonseed Oil</b> —<br>New York, 5 brls. J. Woolley, Sons, & Co.                    | New York, 5 cs.<br>Hamburg, 15 pks. 2 brls. "<br>Marseilles, 1 cs.<br>Dunkirk, 7 cks. 8 dms. " | " 14 cs.                                                                                                                                                                                |
| <b>Soap</b> —<br>Bari, 23 cs.<br>Marseilles, 2 bxs. Thompson & Bedford                                | <b>Dextrine</b> —<br>Hamburg, 50 bgs.                                                   | <b>Cod Oil</b> —<br>Bergen, 27 brls. Wilson, Sons, & Co., Ltd.                                 | <b>Pyrites</b> —<br>Huelva, 1,262 t.                                                                                                                                                    |
| Leghorn, 100                                                                                          | <b>Dried Blood</b> —<br>Ghent, 10 cs.                                                   | <b>Colours</b> —<br>Stettin, 8 cks.<br>Antwerp, 1 cs. Bailey & Leatham                         | <b>Quicksilver</b> —<br>Libao, 100 cyldrs.                                                                                                                                              |
| Palermo, 240                                                                                          | <b>Dyestuffs</b> —<br>Cutch<br>Gothenburg, 10 bxs.                                      | " 14 pks. 17 cks. Wilson, Sons, & Co., Ltd.                                                    | <b>Saltpetre</b> —<br>Hamburg, 10 kgs. Wilson, Sons, & Co., Ltd.                                                                                                                        |
| Rouen, 55                                                                                             | <b>Extracts</b><br>Dieppe, 9 cks.                                                       | Rotterdam, 39<br>37 bxs. W. & C. L. Ringrose<br>16 cks.                                        | <b>Starch</b> —<br>Antwerp, 56 cs. Bailey & Leatham<br>Rotterdam, 58 Hutchinson & Son<br>Bremen, 1,250 Veltmann & Co.<br>Amsterdam, 42 W. & C. L. Ringrose<br>Antwerp, 216 Farley & Co. |
| <b>Soapstone</b> —<br>Bordeaux, 500 bgs. G. G. Blackwell, Sons & Co.                                  | <b>Logwood</b><br>Black River, 596 t.                                                   | Hamburg, 2<br>Ghent, 2 Wilson, Sons, & Co., Ltd.                                               | <b>Stearine</b> —<br>Rotterdam, 11 bls. Hutchinson & Son                                                                                                                                |
| <b>Sodium Chlorate</b> —<br>Havre, 7 cks. Cunard S. S. Co., Ltd.                                      | <b>Farina</b> —<br>Rotterdam, 1,051 bgs.<br>Hamburg, 436                                | " 16<br>Hamburg, 5 cs. G. Malcolm & Son<br>Amsterdam, 5 pks. Hutchinson & Son                  | Antwerp, 23 bgs.                                                                                                                                                                        |
| <b>Starch</b> —<br>Portland, M., 250 bgs. F. W. Simonds & Sons                                        | <b>Glucose</b> —<br>New York, 150 brls. T. M. Duche & Sons                              | Antwerp, 6<br>Rotterdam, 2 6<br>" 8 Wilson, Sons, & Co., Ltd.                                  | <b>Tallow</b> —<br>New York, 14 bds. Wilson, Sons, & Co., Ltd.                                                                                                                          |
| Rotterdam, 140 cs.                                                                                    | <b>Glue</b> —<br>Rotterdam, 40 bgs. 5 cs.                                               | " 9<br>" 9 Wilson, Sons, & Co., Ltd.                                                           | Dunkirk, 8 cks.<br>Boston, 340 pks. "                                                                                                                                                   |
| New York, 250                                                                                         | <b>Lead Chloride</b> —<br>Hamburg, 1 ck.                                                | <b>Cryolite</b> —<br>Copenhagen, 2 cks. Wilson, Sons, & Co., Ltd.                              | <b>Tartar</b> —<br>Bordeaux, 4 cks. Rawson & Robinson                                                                                                                                   |
| Antwerp, 128 J. T. Fletcher & Co.                                                                     | <b>Manganese</b> —<br>Hamburg, 84 cks.                                                  | <b>Dextrine</b> —<br>Stettin, 150 bgs. Wilson, Sons, & Co., Ltd.                               | <b>Tartaric Acid</b> —<br>Rotterdam, 2 cks. W. & C. L. Ringrose                                                                                                                         |
| New York, 50 bxs. Yokohama Specie Bk., Ltd.                                                           | <b>Paraffin Scale</b> —<br>New York, 720 brls. Anglo-American Oil Co.                   | <b>Dyestuffs</b> —<br>Stettin, 150 bgs. Wilson, Sons, & Co., Ltd.                              | <b>Treacle</b> —<br>New York, 411 brls. Wilson, Sons, & Co., Ltd.                                                                                                                       |
| " 2 brls. L. & N. W. Rly. Co.                                                                         | <b>Potash</b> —<br>Rotterdam, 10 cks.<br>Hamburg, 20 dms.<br>Antwerp, 6<br>Dieppe, 9 21 | <b>Alizarine</b><br>Rotterdam, 22 brls. W. & C. L. Ringrose                                    | Boston, 397 brls. "                                                                                                                                                                     |
| Hamburg, 160 cs.                                                                                      | <b>Potassium Chlorate</b> —<br>Gothenburg, 30 kgs.                                      | <b>Argols</b><br>Bordeaux, 19 bgs. Rawson & Robinson                                           | <b>Ultramarine</b> —<br>Rotterdam, 6 cks. Hutchinson & Son                                                                                                                              |
| <b>Sulphur</b> —<br>Catania, 100 t. 17 cks. 50 bgs.                                                   | <b>Potassium Permanganate</b> —<br>Hamburg, 2 cks.                                      | " 38 cks. Wilson, Sons, & Co., Ltd.                                                            | <b>Yarnish</b> —<br>Ghent, 1 ck. Wilson, Sons, & Co., Ltd.                                                                                                                              |
| <b>Talc</b> —<br>Leghorn, 100 bgs.                                                                    | <b>Potassium Sulphate</b> —<br>Rotterdam, 160 cks.                                      | <b>Cutch</b><br>Hamburg, 25 cs. Wilson, Sons, & Co., Ltd.                                      | <b>White Lead</b> —<br>Amsterdam, 101 cks. Hutchinson & Son                                                                                                                             |
| <b>Tallow</b> —<br>New York, 350 hds.<br>Boston, 40<br>New York, 160 tcs. W'sale Co-op. Society, Ltd. | <b>Soap</b> —<br>Rotterdam, 3 cs.                                                       | <b>Madder</b><br>Rotterdam, 2 cks. Hutchinson & Son                                            | " 21 Sissons Bros. & Co.                                                                                                                                                                |
| Campana, 723 cks.<br>B. Ayres, 25 pps.                                                                | <b>Soda</b> —<br>Rotterdam, 18 cks.                                                     | <b>Marseilles</b><br>6 Wilson, Sons, & Co., Ltd.                                               | <b>Wood Pulp</b> —<br>Christiania, 1,118 bls. Wilson, Sons, & Co., Ltd.                                                                                                                 |
| <b>Tar</b> —<br>Boston, 100 brls.                                                                     | <b>Sodium</b> —<br>Antwerp, 7 cs.                                                       | <b>Myrabolams</b><br>Bombay, 8,657 bgs.                                                        | Drontheim, 720<br>Bergen, 271 pks. "<br>Gothenburg, 634 "                                                                                                                               |
| <b>Tartar</b> —<br>Bordeaux, 9 cks.                                                                   | <b>Sodium Nitrate</b> —<br>Rotterdam, 4 cks.                                            | <b>Farina</b> —<br>Stettin, 600 bgs. Wilson, Sons, & Co., Ltd.                                 | <b>Zinc Oxide</b> —<br>Antwerp, 5 cks. Bailey & Leatham                                                                                                                                 |
| <b>Tartaric Acid</b> —<br>Bari, 8 cs.<br>Messina, 1 ck.<br>Rotterdam, 16                              | <b>Starch</b> —<br>Rotterdam, 158 cs.<br>New York, 600 bgs. T. M. Duche & Sons          | " 50                                                                                           | Rotterdam, 23 cs. W. & C. L. Ringrose<br>" 25 cks. Hutchinson & Son                                                                                                                     |
| <b>Treacle</b> —<br>Philadelphia, 25 brls.                                                            | " 1,400                                                                                 |                                                                                                |                                                                                                                                                                                         |
| <b>Yarnish</b> —<br>Ghent, 3 brls. J. T. Fletcher & Co.                                               |                                                                                         |                                                                                                |                                                                                                                                                                                         |



**GLASGOW.**

Week ending May 21st.

|                                           |            |                    |
|-------------------------------------------|------------|--------------------|
| <b>Acetic Acid</b> —                      |            |                    |
| Rotterdam,                                | 14 cks.    |                    |
| <b>Barium Sulphate</b> —                  |            |                    |
| Antwerp,                                  | 150 bgs.   |                    |
| <b>Barytes</b> —                          |            |                    |
| Rotterdam,                                | 42 pks.    |                    |
| <b>Bone Meal</b> —                        |            |                    |
| Bombay,                                   | 3,000 bgs. |                    |
| <b>Castor Oil</b> —                       |            |                    |
| Calcutta,                                 | 30 cs.     |                    |
| Antwerp,                                  | 28 cks.    |                    |
| <b>Chrome Ore</b> —                       |            |                    |
| Ourmelia,                                 | 1,230 t.   | J. & J. White      |
| <b>Colours</b> —                          |            |                    |
| Hamburg,                                  | 2 cs.      |                    |
| Rotterdam,                                | 147 pks.   |                    |
| <b>Cottonseed Oil</b> —                   |            |                    |
| Baltimore,                                | 150 brls.  |                    |
| <b>Cream of Tartar</b> —                  |            |                    |
| Marseilles,                               | 3 cks.     |                    |
| <b>Dried Blood</b> —                      |            |                    |
| Cette,                                    | 2 cs.      |                    |
| <b>Dyestuffs</b> —                        |            |                    |
| Alizarine                                 |            |                    |
| Rotterdam,                                | 107 pks.   |                    |
| Annatto                                   |            |                    |
| Bordeaux,                                 | 3 cks.     |                    |
| Extracts                                  |            |                    |
| Marseilles,                               | 20 cks.    |                    |
| Antwerp,                                  | 1          |                    |
| Valonia                                   |            |                    |
| Smyrna,                                   | 310 t.     | James Buntin & Co. |
| "                                         | 500        | Martin & Millar    |
| <b>Dyestuffs (otherwise un-described)</b> |            |                    |
| Rotterdam,                                | 1 bx.      |                    |
| <b>Farina</b> —                           |            |                    |
| Delfry,                                   | 150 bgs.   |                    |
| Hamburg,                                  | 100        |                    |
| <b>Glucose</b> —                          |            |                    |
| Newport News,                             | 100 brls.  |                    |
| New York,                                 | 250        |                    |

|                           |                         |             |
|---------------------------|-------------------------|-------------|
| <b>Glue</b> —             |                         |             |
| Hamburg,                  | 60 bgs.                 |             |
| Rotterdam,                | 40                      |             |
| <b>Ochre</b> —            |                         |             |
| Marseilles,               | 235 cs.                 |             |
| Baltimore,                | 202 brls.               |             |
| <b>Phosphate</b> —        |                         |             |
| Rotterdam,                | 1 ck.                   |             |
| <b>Potash</b> —           |                         |             |
| Hamburg,                  | 40 cks.                 |             |
| <b>Pyrates</b> —          |                         |             |
| Huelva,                   | 1,811 t.                | Tharsis Co. |
| <b>Sodium Salicylic</b> — |                         |             |
| Rotterdam,                | 2 bxs.                  |             |
| <b>Starch</b> —           |                         |             |
| Baltimore,                | 200 bgs.                |             |
| Newport News,             | 500                     |             |
| Antwerp,                  | 32 cs.                  |             |
| <b>Tallow</b> —           |                         |             |
| Baltimore,                | 100 brls.               |             |
| <b>Tartar</b> —           |                         |             |
| Oporto,                   | 12 cks.                 |             |
| <b>Treacle</b> —          |                         |             |
| Montreal,                 | 1 bx.                   |             |
| <b>Waste Salt</b> —       |                         |             |
| Hamburg,                  | 486 t. 50 bgs. 270 cks. |             |
| <b>White Lead</b> —       |                         |             |
| Rotterdam,                | 106 cks.                |             |
| <b>Wood Pulp</b> —        |                         |             |
| Oporto,                   | 250 bls.                |             |
| New York,                 | 12 rolls                |             |
| Christiania,              | 1,465                   |             |
| Hamburg,                  | 200                     |             |
| <b>Zinc Sulphate</b> —    |                         |             |
| Rotterdam,                | 5 brls.                 |             |

**TYNE.**

Week ending May 16th.

|                          |          |                |
|--------------------------|----------|----------------|
| <b>Barium Chlorate</b> — |          |                |
| Rotterdam,               | 350 bgs. | Tyne S. S. Co  |
| <b>Barytes</b> —         |          |                |
| Rotterdam,               | 50 bgs.  | Tyne S. S. Co. |
| <b>Caustic Soda</b> —    |          |                |
| Laurvig,                 | 4 dms    |                |

|                        |                         |                       |
|------------------------|-------------------------|-----------------------|
| <b>Cod Oil</b> —       |                         |                       |
| Trondhjem,             | 5 brls.                 |                       |
| <b>Colours</b> —       |                         |                       |
| Rotterdam,             | 1 bx. 10 brls.          | Tyne S. S. Co.        |
| Hamburg,               | 4 cks.                  | "                     |
| Antwerp,               | 2 brls.                 | "                     |
| <b>Glucose</b> —       |                         |                       |
| New York,              | 209 brls.               | Furness, Withy, & Co. |
| <b>Manure</b> —        |                         |                       |
| New York,              | 150 bgs.                | Furness, Withy, & Co. |
| <b>Phosphate</b> —     |                         |                       |
| Antwerp,               | 225 t.                  |                       |
| <b>Salt</b> —          |                         |                       |
| Hamburg,               | 350 t.                  | Bede Metal Co.        |
| <b>Saltpetre</b> —     |                         |                       |
| Hamburg,               | 1 ck.                   | Tyne S. S. Co.        |
| <b>Soap</b> —          |                         |                       |
| Christiania,           | 6 cs.                   |                       |
| <b>Starch</b> —        |                         |                       |
| Antwerp,               | 10 cks. 14 cs.          | Tyne S. S. Co.        |
| <b>Stearine</b> —      |                         |                       |
| New York,              | 57 brls.                | Furness, Withy, & Co. |
| <b>Varnish</b> —       |                         |                       |
| New York,              | 7 brls.                 | Furness, Withy, & Co. |
| <b>Waste Salt</b> —    |                         |                       |
| Hamburg,               | 310 t. F. Richter & Co. |                       |
| "                      | 180                     | Bede Metal Co.        |
| <b>White Lead</b> —    |                         |                       |
| Antwerp,               | 1 ck.                   | Tyne S. S. Co.        |
| <b>Wood Pulp</b> —     |                         |                       |
| Rotterdam,             | 125 bls.                | Tyne S. S. Co.        |
| Gothenburg,            | 245                     |                       |
| Christiania,           | 340                     |                       |
| <b>Zinc Sulphate</b> — |                         |                       |
| Gothenburg,            | 30 cks.                 |                       |

**GOOLE.**

Week ending May 13th.

|                      |       |  |
|----------------------|-------|--|
| <b>Acetic Acid</b> — |       |  |
| Rotterdam,           | 2 cs. |  |

|                                           |                 |  |
|-------------------------------------------|-----------------|--|
| <b>Alizarine</b> —                        |                 |  |
| Rotterdam,                                | 10 brls.        |  |
| <b>Alkali</b> —                           |                 |  |
| Dieppe,                                   | 18 cks.         |  |
| <b>Barytes</b> —                          |                 |  |
| Rotterdam,                                | 24 cks.         |  |
| <b>Caoutchouc</b> —                       |                 |  |
| Amsterdam,                                | 1 ble.          |  |
| Boulogne,                                 | 5 cks.          |  |
| <b>Dyestuffs (otherwise un-described)</b> |                 |  |
| Rotterdam,                                | 209 cks. 58 cs. |  |
| Boulogne,                                 | 11 2 63 pks.    |  |
| <b>Madder</b> —                           |                 |  |
| Rotterdam,                                | 4 cks. 1 bx.    |  |
| <b>Potash</b> —                           |                 |  |
| Rotterdam,                                | 19 cks.         |  |
| Hamburg,                                  | 12 dms.         |  |
| Dieppe,                                   | 8               |  |
| Antwerp,                                  | 24              |  |
| Dunkirk,                                  | 8 20            |  |
| <b>Saltpetre</b> —                        |                 |  |
| Rotterdam,                                | 100 bgs.        |  |
| Hamburg,                                  | 7 cks.          |  |
| <b>Soda</b> —                             |                 |  |
| Rotterdam,                                | 1 ck.           |  |
| <b>Waste Salt</b> —                       |                 |  |
| Hamburg,                                  | 642 cks. 140 t. |  |
| <b>Zinc Oxide</b> —                       |                 |  |
| Hamburg,                                  | 5 cks.          |  |

**GRIMSBY.**

Week ending May 16th.

|                                        |               |  |
|----------------------------------------|---------------|--|
| <b>Barytes</b> —                       |               |  |
| Hamburg,                               | 11 cks.       |  |
| <b>Caoutchouc</b> —                    |               |  |
| Rotterdam,                             | 6 cs.         |  |
| Hamburg,                               | 2             |  |
| Antwerp,                               | 2             |  |
| <b>Chemicals (otherwise un-des.)</b> — |               |  |
| Hamburg,                               | 10 pks. 2 cs. |  |
| Rotterdam,                             | 10            |  |
| <b>Dyes</b> —                          |               |  |
| Hamburg,                               | 13 cs.        |  |
| Antwerp,                               | 60 pks.       |  |

**EXPORTS OF CHEMICAL PRODUCTS**
**THE PRINCIPAL PORTS OF THE UNITED KINGDOM.**
**LONDON.**

Week ending May 20th.

|                                           |           |       |
|-------------------------------------------|-----------|-------|
| <b>Acids</b> —                            |           |       |
| Santos,                                   | 23 cs.    | £33   |
| <b>Ammonia (Anhydrous)</b> —              |           |       |
| Sydney,                                   | 50 cydls. | £165  |
| <b>Ammonium Carbonate</b> —               |           |       |
| Calcutta,                                 | 2 t. 3 c. | £10   |
| <b>Ammonium Sulphate</b> —                |           |       |
| Hamburg,                                  | 110 t.    | £910  |
| Rotterdam,                                | 70        | 564   |
| Barbadoes,                                | 200 1 c.  | 1,926 |
| Bremen,                                   | 50        | 410   |
| Ghent,                                    | 60        | 484   |
| St. Lucia,                                | 15 8      | 148   |
| <b>Barium Nitrate</b> —                   |           |       |
| Bombay,                                   | 2 cs.     | £5    |
| <b>Borax</b> —                            |           |       |
| Valparaiso,                               | 4 c.      | £10   |
| Natal,                                    | 20 cs.    | 19    |
| Auckland,                                 | 2 t.      | 41    |
| Gisborne,                                 | 9         | 12    |
| <b>Carbonic Acid Gas</b> —                |           |       |
| Jersey,                                   | 61 tubes  | £23   |
| Brisbane,                                 | 2 c.      | 32    |
| <b>Caustic Soda</b> —                     |           |       |
| Cape Town,                                | 8 c.      | £8    |
| Brisbane,                                 | 5 t. 10   | 40    |
| Napier,                                   | 9         | 23    |
| Shanghai,                                 | 6         | 9     |
| E. London,                                | 5         | 7     |
| <b>Chemicals (otherwise un-described)</b> |           |       |
| Hamburg,                                  | 1 brl.    | £242  |
| Libau,                                    | 5 c.      | 16    |
| Adelaide,                                 | 3 pkgs.   | 14    |
| B. Ayres,                                 | 5         | 20    |
| Dunkirk,                                  | 6 t. 1    | 75    |
| Barcelona,                                | 78 cs.    | 30    |
| Brisbane,                                 | 13 pks.   | 98    |
| Perth,                                    | 20        | 15    |
| <b>Citric Acid</b> —                      |           |       |
| Libau,                                    | 1 ck.     | £8    |
| St Petersburg,                            | 1 t. 5 c. | 155   |

|                                            |                |            |
|--------------------------------------------|----------------|------------|
| Hamburg,                                   | 10             | 126        |
| Brussels,                                  | 10             | 5 kg's. 93 |
| Kurachee,                                  | 1 cs.          | 12         |
| Perth,                                     | 5              | 21         |
| Bombay,                                    | 5              | 75         |
| <b>Coal Products</b> —                     |                |            |
| Sydney,                                    | 2 cs.          | £3         |
| <b>Aniline Dyes</b> —                      |                |            |
| Sydney,                                    | 1 cs.          | £10        |
| Boston,                                    | 27 pkgs.       | 274        |
| <b>Aniline Oil</b> —                       |                |            |
| Genoa,                                     | 11 dms.        | £400       |
| <b>Aniline Salts</b> —                     |                |            |
| Leghorn,                                   | 5 cks.         | £40        |
| <b>Anthracene</b> —                        |                |            |
| Dusseldorf,                                | 147 cks.       | £1,300     |
| Rotterdam,                                 | 59             | 210        |
| Cologne,                                   | 141            | 1,762      |
| <b>Benzol</b> —                            |                |            |
| Rotterdam,                                 | 12 dms.        | £20        |
| Treport,                                   | 50 cks.        | 230        |
| Amsterdam,                                 | 12             | 193        |
| <b>Naphtha</b> —                           |                |            |
| Melbourne,                                 | 20 dms.        | £6         |
| Boulogne,                                  | 4 brls.        | £5         |
| <b>Naphthalene</b> —                       |                |            |
| Amsterdam,                                 | 13 cks. 35 bgs | £41        |
| Hamburg,                                   | 600            | 297        |
| Antwerp,                                   | 2              | 16         |
| Treport,                                   | 50 pkgs. 36    | 115        |
| <b>Pitch</b> —                             |                |            |
| Boston,                                    | 299 brls.      | £175       |
| Hochfeldt,                                 | 886 t.         | 1,310      |
| Newport News,                              | 2,566 bgs      | 770        |
| New York,                                  | 441 cks.       | 240        |
| Montreal,                                  | 380            | 138        |
| Rahoor,                                    | 16             | 17         |
| Bourgas,                                   | 50             | 17         |
| Antwerp,                                   | 1,057          | 1,893      |
| Dunkirk,                                   | 569            | 867        |
| B. Ayres,                                  | 9 blocks       | 8          |
| Alexandria,                                | 130            | 51         |
| <b>Spent Oxide</b> —                       |                |            |
| Wesseling a/R,                             | 127 t.         | £232       |
| <b>Coal Products (otherwise un-des.)</b> — |                |            |
| Ghent,                                     | 2 dms.         | £18        |

|                                          |               |        |
|------------------------------------------|---------------|--------|
| <b>Corrosive Sublimate</b> —             |               |        |
| Bombay,                                  | 1 cs.         | £12    |
| <b>Cream of Tartar</b> —                 |               |        |
| Hiogo,                                   | 10 c.         | £49    |
| <b>Disinfectants</b> —                   |               |        |
| New York,                                | 2 t.          | £17    |
| Rombay,                                  | 6 11 c.       | 54     |
| Singapore,                               | 200 drs.      | 175    |
| Cape Town,                               | 50 bgs.       | 35     |
| Antwerp,                                 | 15 cs.        | 30     |
| Sydney,                                  | 100           | 20     |
| Kurachee,                                | 12 pks.       | 10     |
| Calcutta,                                | 207           | 400    |
| Gisborne,                                | 18            | 20     |
| <b>Glycerine</b> —                       |               |        |
| Shanghai,                                | 5 cs.         | £15    |
| <b>Iodine</b> —                          |               |        |
| Dunkirk,                                 | 1 t. 5 c.     | £1,300 |
| <b>Manure (otherwise un-described)</b> — |               |        |
| St. Lucia,                               | 80 t.         | £727   |
| Auckland,                                | 30            | 120    |
| Bordeaux,                                | 30            | 22     |
| Mauritius,                               | 22 10 c.      | 350    |
| Barbadoes,                               | 218 5         | 169    |
| <b>Oxalic Acid</b> —                     |               |        |
| Karachi,                                 | 10 c.         | £20    |
| <b>Phosphorus</b> —                      |               |        |
| Cape Town,                               | 5 c.          | £43    |
| <b>Potash</b> —                          |               |        |
| Shanghai,                                | 2 c.          | £4     |
| <b>Potassium Dichromate</b> —            |               |        |
| Athens,                                  | 1 t. 4 c.     | £15    |
| <b>Potassium Chlorate</b> —              |               |        |
| Bombay,                                  | 75 cks. 4 cs. | £43    |
| Athens,                                  | 2 c.          | 4      |
| <b>Potassium Cyanide</b> —               |               |        |
| Shanghai,                                | 5 cs. 3 cks.  | £61    |
| Algoa Bay,                               | 4 c.          | 118    |
| <b>Potassium Sulphate</b> —              |               |        |
| S. Lucia,                                | 15 t.         | £154   |
| <b>Salicylic Acid</b> —                  |               |        |
| Cape Town,                               | 1 c.          | £10    |

|                             |                  |                |
|-----------------------------|------------------|----------------|
| <b>Salammoniac</b> —        |                  |                |
| Varna,                      | 15 c.            | £26            |
| Bagdad,                     | 2 t.             | 71             |
| Bourgas,                    | 9                | 16             |
| Shanghai,                   | 5                | 1              |
| Athens,                     | 9                | 4              |
| <b>Salt Cake</b> —          |                  |                |
| Antwerp,                    | 150 t.           | £263           |
| <b>Saltpetre</b> —          |                  |                |
| Melbourne,                  | 2 t.             | £45            |
| Bahia,                      | 2 15 c.          | 65             |
| Sydney,                     | 5 10             | 117            |
| <b>Sheep Dip</b> —          |                  |                |
| Pt. Elizabeth,              | 1 t. 7 c.        | £28            |
| Cape Town,                  | 850 dms.         | 150 cs. 531    |
| Algoa Bay,                  | 1,500            | 26 pks. 217    |
| M. Video,                   | 375              | 20 cks. 55 122 |
| B. Ayres,                   | 150 bgs          | 25 200         |
| Punta Arena,                | 10               | 10             |
| Natal,                      | 500              | 101            |
| <b>Soda Crystals</b> —      |                  |                |
| Shanghai,                   | 1 t. 10 c.       | £6             |
| <b>Sodium Acetate</b> —     |                  |                |
| Melbourne,                  | 1 t. 1 c.        | £16            |
| <b>Sodium Bicarbonate</b> — |                  |                |
| Rockhampton,                | 1 t.             | £8             |
| <b>Sodium Sulphate</b> —    |                  |                |
| Ghent,                      | 55 t.            | £55            |
| <b>Sulphur</b> —            |                  |                |
| Cape Town,                  | 50 cks. 100 kgs. | £92            |
| <b>Sulphuric Acid</b> —     |                  |                |
| Singapore,                  | 1 t. 18 c.       | £18            |
| E. London,                  | 25 cs.           | 19             |
| <b>Strontium Nitrate</b> —  |                  |                |
| Bombay,                     | 6 cs.            | £20            |
| <b>Tartaric Acid</b> —      |                  |                |
| Perth,                      | 3 kgs.           | £16            |
| Sydney,                     | 10               | 63             |

**LIVERPOOL.**

Week ending May 20th.

|                  |           |      |
|------------------|-----------|------|
| <b>Albumen</b> — |           |      |
| Boston,          | 5 t. 4 c. | £118 |
| Hamburg,         | 5         | 20   |



|                                          |          |          |                            |           |           |                               |            |         |      |                              |                        |
|------------------------------------------|----------|----------|----------------------------|-----------|-----------|-------------------------------|------------|---------|------|------------------------------|------------------------|
| <b>Alum—</b>                             |          |          | Santander,                 | 10        | 15        | Valparaiso,                   | 3          | 10      | 30   | <b>Soda Oxide—</b>           |                        |
| Porto Alegre,                            | 3        | 8 c.     | Boston,                    | 2         | 15        | <b>Paraffin Wax—</b>          |            |         |      | New York,                    | 18 cs.                 |
| Varna,                                   | 3        | 3        | New York,                  | 5         | 1         | B. Ayres,                     | 5 cs.      |         |      | <b>Sodium Bicarbonate—</b>   |                        |
| Toronto,                                 | 14       | 8        | Stockholm,                 | 3         |           | <b>Phosphorus—</b>            |            |         |      | Adelaide,                    | 50 kgs. 5 cks. 270 bgs |
| Malaga,                                  | 3        | 2        | Stettin,                   |           | 6         | Hio,                          | 15 cs.     | £188    |      | Alexandria,                  | 50 brls.               |
| Melbourne Bay,                           | 2        | 10       | Odessa,                    | 5         |           | <b>Potassium Bicarbonate—</b> |            |         |      | Amsterdam,                   | 7                      |
| Penang,                                  | 2        | 14       | Genoa, 6 cks.              | 1         | 2         | Philadelphia,                 | 16 c.      | £20     |      | Antwerp,                     | 45                     |
| Cape Town,                               | 1        | 8        | Philadelphia,              | 13        | 12        | <b>Potassium Bichromate—</b>  |            |         |      | Boston,                      | 210                    |
| B. Ayres,                                | 1        | 0        | Naples,                    | 1         | 14        | Palermo,                      | 1 c.       | £11     |      | Calcutta,                    | 750                    |
| Smyna,                                   | 6        | 18       | M. Video,                  | 4         | 3         | <b>Potassium Chlorate—</b>    |            |         |      | Catania,                     | 40                     |
| Aleppo,                                  | 3        | 3        | Mersyne,                   | 16        |           | Copenhagen,                   | 3 t. 15 c. | £148    |      | Constantinople,              | 40                     |
| Sydney,                                  | 2        |          | <b>China Clay—</b>         |           |           | Riga,                         | 5          | 196     |      | Danzig,                      | 70                     |
| Halifax,                                 | 1        | 10       | Boston,                    | 162 bgs.  | 722 cks.  | M. Video,                     | 5          | 11      |      | Galatz,                      | 65                     |
| Melbourne,                               | 3        | 10       | <b>Coal Products—</b>      |           |           | Mexico,                       | 2          | 18      | 2 q. | Halifax,                     | 50                     |
| <b>Aluminous Cake—</b>                   |          |          | Naphthol                   |           |           | Antwerp,                      | 9          | 372     |      | Hio,                         | 500                    |
| Melbourne Whf., 10 t.                    | 16 c.    | 1 q.     | Pitch                      |           |           | Gutajewsky,                   | 11         | 444     |      | Konigsberg,                  | 95                     |
| Calcutta,                                | 11       | 8        | Antwerp,                   | 100 brls. |           | Hio,                          | 18         | 754     |      | Malaga,                      | 33                     |
| <b>Ammonia—</b>                          |          |          | Cette,                     | 610 L.    |           | New York,                     | 15         | 578     |      | Marseilles,                  | 18                     |
| Pernambuco,                              | 17 c.    | 3 q.     | Portland, O.,              | 9         | 14 c.     | Boston,                       | 3          | 141     |      | Melbourne,                   | 317                    |
| Havana,                                  | 1 t.     |          | <b>Tar</b>                 |           |           | Genoa,                        | 1          | 46      |      | Nantes,                      | 32                     |
| <b>Ammonium Carbonate—</b>               |          |          | Accra,                     | 20 brls.  |           | St. Petersburg,               | 52         | 2,056   |      | New York,                    | 83 tcs. 1,988 bgs      |
| Konigsberg,                              | 11 c.    | 1 q.     | Galatz,                    | 50        |           | <b>Salt—</b>                  |            |         |      | Palermo,                     | 30 kgs.                |
| Venice,                                  | 15       |          | Honolulu,                  | 50        | 10 cks.   | Adnah,                        | 5 t.       |         |      | Para,                        | 10                     |
| <b>Ammonium Chloride—</b>                |          |          | Ihrail,                    | 50        |           | Archat,                       | 630        |         |      | Pernambuco,                  | 160                    |
| Santander,                               | 1 t.     |          | Kustendjie,                | 25        |           | Benin,                        | 8          |         |      | Quebec,                      | 150                    |
| Alexandria,                              | 10 brls. |          | M. Video,                  | 10        |           | Brisbane,                     | 150        |         |      | Riga,                        | 730                    |
| San Francisco,                           | 1        | 12 c.    | <b>Copper Sulphate—</b>    |           |           | B. Ayres,                     | 150        |         |      | Singapore,                   | 5                      |
| Barcelona,                               | 3        | 1        | Malaga,                    | 11 c.     | 1 q.      | Iceland,                      | 261        |         |      | Sutjewski,                   | 800                    |
| <b>Ammonium Sulphate—</b>                |          |          | Malaga,                    | 15 t.     |           | Lagos,                        | 50         |         |      | Sydney,                      | 460                    |
| Barcelona,                               | 5 t.     | 1 c.     | Venice,                    | 115       | 5         | Landana,                      | 11         | 55 c.   |      | Yokohama,                    | 1,000                  |
| Nantes,                                  | 25       |          | Leghorn,                   | 71        | 3         | Malta,                        | 4          | 10      |      | <b>Sodium Carbonate—</b>     |                        |
| Valencia,                                | 293      | 2        | Genoa,                     | 179       | 7         | Manila,                       | 8          |         |      | Boston,                      | 56 brls.               |
| Las Palmas,                              | 29       | 10       | Naples,                    | 26        | 8         | Monrovia,                     | 22         | 10      |      | <b>Sodium Silicate—</b>      |                        |
| Havre,                                   | 20       | 160      | Ancona,                    | 37        | 6         | Montreal,                     | 70         |         |      | Antwerp,                     | 17 brls.               |
| Carthagen (Spn.) 10                      | 4        |          | Rordeaux,                  | 215       | 6         | N. Orleans,                   | 330        |         |      | Rouen,                       | 2                      |
| <b>Bleaching Powder—</b>                 |          |          | Trieste,                   | 17        |           | Quebec,                       | 700        |         |      | <b>Sulphur—</b>              |                        |
| Ancona,                                  | 81 cks.  |          | Lisbon,                    | 20        | 1         | <b>Salt Cake—</b>             |            |         |      | M. Video,                    | 1 t.                   |
| Boston,                                  | 149      |          | Oporto,                    | 40        | 1         | Baltimore,                    | 125 t.     | 3 c.    | £164 | Cartagena, N.G.,             | 1                      |
| Genoa,                                   | 105      |          | <b>Coppers—</b>            |           |           | <b>Saltpetre—</b>             |            |         |      | Macao,                       | 10                     |
| Konigsberg,                              | 30       |          | Halifax,                   | 3 t.      | 16 c.     | M. Video,                     | 5 c.       |         |      | Boston,                      | 200                    |
| Lisbon,                                  | 20 c.    |          | Aleppo,                    | 3         | 2         | Macao,                        | 4 t.       | 8       | £6   | Miramichi,                   | 230                    |
| Naples,                                  | 47       |          | <b>Disinfectants—</b>      |           |           | Pernambuco,                   | 2          | 17      | £7   | Pt. Elizabeth,               | 4                      |
| Newport News,                            | 1        | 46 pks.  | Cape Town,                 | 8 c.      | 2 q.      | <b>Sheep Dip—</b>             |            |         |      | Philadelphia,                | 3                      |
| New York,                                | 5        |          | Alexandria,                | 8 cs.     |           | Natal,                        | 1 t.       | 7 c.    | £40  | <b>Superphosphates—</b>      |                        |
| Oporto,                                  | 5        |          | Calcutta,                  | 170 dms.  |           | Alicante,                     | 8          |         | 8    | Alcanta,                     | 10 t.                  |
| Philadelphia,                            | 67       |          | Bombay,                    | 47        | 6 cks.    | Pt. Elizabeth,                | 8          | 7       | 187  | Valencia,                    | 300                    |
| Venice,                                  | 8        |          | <b>Guano—</b>              |           |           | <b>Soap—</b>                  |            |         |      | <b>Tin Oxide—</b>            |                        |
| Windsor Mills,                           | 64       |          | Gd. Canary,                | 5 t.      | 1 c.      | Alexandria,                   | 6 bxs.     |         |      | Montreal,                    | 5 c.                   |
| Corinto,                                 | 1 t.     | 2        | <b>Gypsum—</b>             |           |           | Algoa Bay,                    | 600        |         |      | <b>Varnish—</b>              |                        |
| <b>Boric Acid—</b>                       |          |          | Portland, O.,              | 112 t.    | 14 c.     | Bahia,                        | 24         |         |      | Bahia,                       | 1 cs.                  |
| Vera Cruz,                               | 3 t.     | 2 c.     | <b>Iron Oxide—</b>         |           |           | Barbadoes,                    | 370        |         |      | New York,                    | 8                      |
| Boston,                                  | 3 t.     | 2 q.     | Rosario,                   | 40 t.     |           | Boma,                         | 40         |         |      | Toronto,                     | 1 brl.                 |
| <b>Borax—</b>                            |          |          | <b>Lime—</b>               |           |           | Kombay,                       | 8 cs.      |         |      | <b>Zinc Chloride—</b>        |                        |
| Aarhus,                                  | 5 c.     | 2 q.     | Lagos,                     | 8 t.      | 5 c.      | Cabenda,                      | 260        |         |      | Genoa,                       | 4 tins                 |
| New York,                                | 10 t.    | 11       | <b>Magnesite—</b>          |           |           | Callao,                       | 1          |         |      | Bombay,                      | 6 t. 10 c.             |
| Vera Cruz,                               | 1        | 3        | Halifax,                   | 5 c.      |           | Cameroon,                     | 180        |         |      | <b>MANCHESTER</b>            |                        |
| Hamburg,                                 | 1        | 19       | <b>Magnesium Sulphate—</b> |           |           | Cape Coast,                   | 362        |         |      | <i>Week ending May 20th.</i> |                        |
| Havre,                                   | 2        | 4        | Rio de Janeiro, 150 kgs.   |           |           | Cape Town,                    | 1,000      |         |      | <b>Aniline Colours—</b>      |                        |
| Rotterdam,                               | 13       | 11       | <b>Manure—</b>             |           |           | Chama,                        | 50         |         |      | Hamburg,                     | 1 cs. 5 kgs.           |
| <b>Calcium—</b>                          |          |          | Cullera,                   | 100 t.    | £180      | Colombo,                      | 11         |         |      | Rotterdam,                   | 5 cks. 1               |
| Odessa,                                  | 40 t.    | 7 c.     | Valencia,                  | 140       | 265       | Constantinople,               | 1          |         |      | <b>Aniline Oil—</b>          |                        |
| <b>Carbolic Acid—</b>                    |          |          | Rio de Janeiro,            | 1         | 1 c.      | Colon,                        | 503        |         |      | Antwerp,                     | 3 dms.                 |
| St. Lucia,                               | 9 c.     | 1 q.     | Teneriffe,                 | 20        | 10        | Delagoa Bay,                  | 900        | 15 bds. |      | Hamburg,                     | 31                     |
| Calcutta,                                | 4 cs.    |          | Las Palmas,                | 5         | 10        | E. London,                    | 2,660      | 13      |      | <b>Asbestos—</b>             |                        |
| Constantinople,                          | 5        | 1        | New York,                  | 10        | 18        | Freemantle,                   | 100        |         |      | Hamburg,                     | 2 bgs.                 |
| New York,                                | 7 t.     | 13       | <b>Paint—</b>              |           |           | Guayaquil,                    | 150        |         |      | <b>Benzol—</b>               |                        |
| Hamburg,                                 | 5        |          | Alexandria,                |           |           | Hamburg,                      | 50         | 88      |      | Rotterdam,                   | 75 cks.                |
| Shanghai,                                | 2        | 3        | Antofagasta,               | 14 cks.   | 2 brls.   | Kingston, Ja.,                | 7,050      |         |      | <b>Carbolic Acid—</b>        |                        |
| Philadelphia,                            | 11       | 10       | Antwerp,                   |           |           | Malta,                        | 20         |         |      | Rotterdam,                   | 50 cks.                |
| <b>Caustic Potash—</b>                   |          |          | Bahia,                     | 9 cs.     | 1         | New York,                     | 250        |         |      | <b>Cresote Salts—</b>        |                        |
| Melbourne,                               | 2 t.     | 4 c.     | Barce,ona,                 | 3         |           | Old Calabar,                  | 1,300      |         |      | Trepport,                    | 60 bgs.                |
| <b>Caustic Soda—</b>                     |          |          | Belize,                    | 245       |           | Opobo,                        | 1,302      |         |      | <b>Potassium Sulphate—</b>   |                        |
| Amsterdam,                               | 58 dms.  |          | B. Ayres,                  | 106       |           | Para,                         | 1          |         |      | Hamburg,                     | 1 kg.                  |
| Barcelona,                               | 208      |          | Calbarien,                 | 2         |           | Savanna,                      | 5          |         |      | <b>Soda—</b>                 |                        |
| Bari,                                    | 17       |          | Callao,                    | 2 pks.    |           | Singapore,                    | 2,369      |         |      | Copenhagen,                  | 12 bgs.                |
| Brisbane,                                | 10 bxs.  |          | Hamburg,                   | 20        | 23 dms.   | Shanghai,                     | 1,060      |         |      | <b>Sodium Bicarbonate—</b>   |                        |
| Cadiz,                                   | 6 cks.   |          | Havana,                    | 3         | 10        | Valparaiso,                   | 40         |         |      | Antwerp,                     | 2 cs.                  |
| Carupano,                                | 23       |          | Iquitos,                   | 4         |           | Victoria,                     | 200        |         |      | <b>Tar Oil—</b>              |                        |
| E. London,                               | 40       |          | Jaffa,                     | 1         |           | Warri,                        | 2          |         |      | Antwerp,                     | 10 cks.                |
| Fairwater,                               | 52       |          | La Libertad,               | 25        |           | <b>Soda Alkali—</b>           |            |         |      | Trepport,                    | 2 dms.                 |
| Genoa,                                   | 163      |          | Loanda,                    | 3         |           | Melbourne,                    | 113 brls.  |         |      | <b>Tar Salts—</b>            |                        |
| Halifax,                                 | 35       |          | Manaos,                    | 7         |           | <b>Soda Ash—</b>              |            |         |      | Hamburg,                     | 18 cks.                |
| Hamburg,                                 | 160      | 12       | Punta Arenas,              | 4         | 12 cs. 2  | Adelaide,                     | 251 cks.   |         |      | <b>HULL.</b>                 |                        |
| Kurrachee, 5 cs.                         |          |          | St. John's, Nfld.,         | 9 brls.   |           | Beyrout,                      | 70 brls.   |         |      | <i>Week ending May 16th.</i> |                        |
| Leghorn,                                 | 35       |          | San Juan,                  | 2         | 202 kgs.  | B. Ayres, 100 kgs.            | 14 tcs.    |         |      | <b>Alkali—</b>               |                        |
| Libau,                                   | 97       |          | Sierra Leone,              | 12        |           | Cadiz,                        | 5          |         |      | Leghorn,                     | 20 cks.                |
| Messina,                                 | 20       |          | Sulina,                    | 60        |           | Calcutta,                     | 101        |         |      | <b>Benzol—</b>               |                        |
| Naples,                                  | 6        |          | Vera Cruz,                 | 30        |           | Copenhagen,                   | 100 bgs.   |         |      | Amsterdam,                   | 113 cks. 28 dms.       |
| New York,                                | 50       | 150 kgs. | <b>Painters Colours—</b>   |           |           | Ghent,                        | 260        |         |      | <b>Bleaching Powder—</b>     |                        |
| Philadelphia,                            | 50       |          | B. Ayres,                  | 30 brls.  |           | Hamburg,                      | 100        | 15      |      | Bombay,                      | 5 cs.                  |
| Riga,                                    | 25       |          | Christiania,               | 10 cks.   |           | Montreal,                     | 491        |         |      | Libau,                       | 14 cks.                |
| Rio de Janeiro,                          | 50       |          | Lisbon,                    | 7 cs.     | 60 dms.   | New York,                     | 25         | 125     |      |                              |                        |
| Rotterdam,                               | 67       |          | Montreal,                  | 20        | 5 kgs.    | Philadelphia,                 | 126        |         |      |                              |                        |
| Sydney,                                  | 10       |          | New York,                  | 39        | 3 tcs.    | Rio de Janeiro,               | 2,624      |         |      |                              |                        |
| Tampico,                                 | 172      |          | Oporto,                    | 2         |           | Venice,                       | 20         |         |      |                              |                        |
| Toronto,                                 | 50       |          | Pernambuco,                | 20        | 150 brls. | Yokohama,                     | 100        |         |      |                              |                        |
| Valparaiso,                              | 25       |          | Puerto Cabello,            | 1         |           | <b>Soda Crystals—</b>         |            |         |      |                              |                        |
| Venice,                                  | 35       |          | Shanghai, 11 cs.           | 9         |           | Brockville,                   | 70 kgs.    |         |      |                              |                        |
| Vera Cruz,                               | 35       |          | Talcahuano,                | 17        | 88        | Calcutta,                     | 17 brls.   |         |      |                              |                        |
| <b>Chemicals (otherwise undescribed)</b> |          |          | Toronto,                   | 1         |           | Gibraltar,                    | 20         |         |      |                              |                        |
| Rotterdam,                               | 1 t.     | £33      |                            |           |           | Sydney,                       | 60         |         |      |                              |                        |
| Antwerp,                                 | 3 c.     |          |                            |           |           |                               |            |         |      |                              |                        |
| Leghorn,                                 | 1        | 34       |                            |           |           |                               |            |         |      |                              |                        |

|                        |  |               |       |          |  |
|------------------------|--|---------------|-------|----------|--|
| da—                    |  |               |       |          |  |
| 1 ck.                  |  | 4 dms.        |       |          |  |
|                        |  | 12            |       |          |  |
|                        |  | 80            |       |          |  |
|                        |  | 40            |       |          |  |
| (otherwise unassigned) |  |               |       |          |  |
|                        |  | 11 cks. 5 cs. |       |          |  |
|                        |  | 1             | 26    |          |  |
|                        |  | 53            |       | 350 pks. |  |
|                        |  | 8             |       | 5        |  |
| slbs.                  |  |               |       |          |  |
|                        |  | 34            |       |          |  |
|                        |  | 8             |       |          |  |
|                        |  | 45            |       |          |  |
|                        |  | 25            | 10    | 1 tub.   |  |
|                        |  | 9             | 98    |          |  |
|                        |  | 50            |       |          |  |
|                        |  | 7             | 4     |          |  |
|                        |  | 100           | 25    | 50       |  |
|                        |  | 96            |       | 100      |  |
|                        |  | 24            |       |          |  |
|                        |  | 8             |       |          |  |
| urg.                   |  | 6             | 5     |          |  |
| Oil—                   |  |               |       |          |  |
|                        |  | 138 c.        |       |          |  |
|                        |  | 1,759         |       |          |  |
|                        |  | 200           |       |          |  |
|                        |  | 35            |       |          |  |
|                        |  | 137           |       |          |  |
|                        |  | 150           |       |          |  |
|                        |  | 2,550         |       |          |  |
|                        |  | 57            |       |          |  |
|                        |  | 105           |       |          |  |
|                        |  | 99            |       |          |  |
|                        |  | 2,009         |       |          |  |
|                        |  | 248           |       |          |  |
|                        |  | 50            |       |          |  |
|                        |  | 20 cks.       |       |          |  |
| (otherwise unassigned) |  |               |       |          |  |
|                        |  | 4 cks.        |       |          |  |
|                        |  | 6 cs.         |       |          |  |
|                        |  | 1             |       |          |  |
|                        |  | 5 bgs.        |       |          |  |
| il—                    |  |               |       |          |  |
|                        |  | 5 c.          |       |          |  |
|                        |  | 152           |       |          |  |
|                        |  | 448           |       |          |  |
|                        |  | 1,218         |       |          |  |
| ind.                   |  | 83            |       |          |  |
| n.                     |  | 34            |       |          |  |
|                        |  | 149           |       |          |  |
|                        |  | 1,217         |       |          |  |
|                        |  | 30            |       |          |  |
|                        |  | 185           |       |          |  |
|                        |  | 6 cks.        |       |          |  |
| Colours—               |  |               |       |          |  |
|                        |  | 66            | 1 cs. | 1 pk.    |  |
| dms.                   |  | 271           |       |          |  |
|                        |  | 8             |       |          |  |
|                        |  | 220           | 1,713 |          |  |
| ople.                  |  | 18            |       |          |  |
|                        |  | 252           | 1     | 24 dms.  |  |
| n.                     |  | 11            | 7     | 2        |  |
|                        |  | 44            |       |          |  |
|                        |  | 28            |       |          |  |
| g.                     |  | 5             |       | 10       |  |
|                        |  | 30            | 3     |          |  |
| g.                     |  | 27            |       |          |  |
|                        |  | 6             |       |          |  |
| sk.                    |  | 19            |       | 100      |  |
|                        |  | 151           |       | 95 pks.  |  |
|                        |  | 334           |       | 60       |  |
|                        |  | 7             |       | 2        |  |
| ciro                   |  | 2             | 10    | 200      |  |
|                        |  | 193           |       |          |  |
| urg.                   |  | 83            |       |          |  |
|                        |  | 8             |       |          |  |
|                        |  |               |       | 36       |  |
|                        |  | 402 t.        |       |          |  |
|                        |  | 66            |       |          |  |
|                        |  | 100           |       |          |  |
| burg.                  |  | 15 cs.        |       |          |  |
|                        |  | 46 cs.        |       |          |  |
| n.                     |  | 7 cks.        |       |          |  |
|                        |  | 23            |       |          |  |
| i.                     |  | 13            |       |          |  |
| m.                     |  | 12 cks.       |       |          |  |
|                        |  | 5             |       |          |  |
|                        |  | 2             |       |          |  |
|                        |  | 4             |       |          |  |
|                        |  | 3             |       |          |  |

|                    |         |
|--------------------|---------|
| Copenhagen,        | 10      |
| Dunkirk,           | 50      |
| <b>Turpentine—</b> |         |
| Genoa,             | 6 cks.  |
| <b>Varnish—</b>    |         |
| Amsterdam,         | 2 cs.   |
| Abo,               | 1 ck. 7 |
| Bombay,            | 85      |
| Christiania,       | 1       |
| Genoa,             | 2       |
| Gothenburg,        | 1       |
| Hamburg,           | 1       |
| Marseilles,        | 3       |
| Norrkoping,        | 1 dm.   |
| Stockholm,         | 5       |

## GLASGOW.

Week ending May 21st.

|                                         |              |  |
|-----------------------------------------|--------------|--|
| <b>Albumen—</b>                         |              |  |
| U.S.A.,                                 | £151         |  |
| <b>Ammonium Chloride—</b>               |              |  |
| Gothenburg,                             | £25          |  |
| <b>Ammonium Sulphate—</b>               |              |  |
| Antigua,                                | 10 t. 13½ c. |  |
| Cullera,                                | 101 2½       |  |
| Valencia,                               | 305 4½       |  |
| Barbadoes,                              | 154 13½      |  |
| <b>Benzine—</b>                         |              |  |
| France,                                 | £150         |  |
| <b>Bleaching Powder—</b>                |              |  |
| Melbourne,                              | 7 t. 6 c.    |  |
| Calcutta,                               | 16 10        |  |
| Penang,                                 | 3            |  |
| U.S.A.,                                 | 7 18½        |  |
| <b>Carbolic Acid—</b>                   |              |  |
| Queensland,                             | £21          |  |
| Christiania,                            | 9            |  |
| <b>Castor Oil—</b>                      |              |  |
| Adelaide,                               | £32          |  |
| <b>Caustic Soda—</b>                    |              |  |
| U.S.A.,                                 | 58 t. 4½ c.  |  |
| <b>Coal Products—</b>                   |              |  |
| <b>Aniline Colours</b>                  |              |  |
| U.S.A.,                                 | £82          |  |
| <b>Creosote</b>                         |              |  |
| U.S.A.,                                 | £250         |  |
| <b>Creosote Oil</b>                     |              |  |
| U.S.A.,                                 | £43          |  |
| Hamburg,                                | 56 t. 5 c.   |  |
| France,                                 | 2,100        |  |
| <b>Naphtha</b>                          |              |  |
| Paris,                                  | £75          |  |
| <b>Pitch</b>                            |              |  |
| Oporto,                                 | £97          |  |
| Canada,                                 | 207          |  |
| Ancona,                                 | 1,971        |  |
| France,                                 | 500          |  |
| Gothenburg,                             | 190          |  |
| U.S.A.,                                 | 360          |  |
| Venice,                                 | 347          |  |
| <b>Tar</b>                              |              |  |
| Calcutta,                               | £22          |  |
| Colombo,                                | 54           |  |
| Madras,                                 | 76           |  |
| Christiania,                            |              |  |
| Hamburg,                                | 95 brls.     |  |
| Gothenburg,                             | 3 t. 11 c.   |  |
| <b>Tar Oil</b>                          |              |  |
| Rotterdam,                              | 4 t. 16 c.   |  |
| <b>Coal Products—(otherwise undes.)</b> |              |  |
| Rotterdam,                              | £428         |  |
| <b>Cod Oil—</b>                         |              |  |
| Brishane,                               | £43          |  |
| Melbourne,                              | 31           |  |
| Bordeaux,                               | 120          |  |
| <b>Cutch—</b>                           |              |  |
| Nova Scotia,                            | £25          |  |
| <b>Dyestuffs (otherwise undes.)</b>     |              |  |
| Barcelona,                              | £40          |  |
| <b>Extracts—</b>                        |              |  |
| Melbourne,                              | £110         |  |
| Barcelona,                              | 115          |  |
| Canada,                                 | 175          |  |
| <b>Guano—</b>                           |              |  |
| Barbadoes,                              | 10 t. 1 c.   |  |
| <b>Iron Sulphate—</b>                   |              |  |
| Madras,                                 | £33          |  |
| <b>Lime—</b>                            |              |  |
| Antigua,                                | 8½ c.        |  |
| <b>Linseed Oil—</b>                     |              |  |
| Brisbane,                               | 3 t. 10½ c.  |  |
| Hobart,                                 | 2 10         |  |
| Mauritius,                              | 4 19½        |  |
| Melbourne,                              | 6 5          |  |
| H. Ayres,                               | 4 3          |  |
| Kingston, Jam,                          | 1 8½         |  |
| <b>Logwood—</b>                         |              |  |
| Melbourne,                              | £132         |  |
| Montreal,                               | 35           |  |
| Canada,                                 | 46           |  |

## Magnesium Sulphate—

|                              |              |
|------------------------------|--------------|
| Melbourne,                   | £20          |
| <b>Manure—</b>               |              |
| Cullera,                     | 262 t. 4½ c. |
| Mexico City,                 | £85          |
| Trinidad,                    | 71 12        |
| <b>Paint—</b>                |              |
| Lima,                        | £36          |
| Newfoundland,                | 20           |
| Maracaibo,                   | 46           |
| Yokohama,                    | 24           |
| <b>Painters' Colours—</b>    |              |
| Brisbane,                    | £221         |
| Calcutta,                    | 569          |
| Colombo,                     | 203          |
| E. London,                   | 58           |
| Hio,                         | 37           |
| Madras,                      | 28           |
| Mauritius,                   | 450          |
| Melbourne,                   | 105          |
| Rockhampton,                 | 29           |
| U.S.A.,                      | 60           |
| Rotterdam,                   | 50           |
| Barbadoes,                   | 22           |
| Hong Kong,                   | 90           |
| Shanghai,                    | 254          |
| Singapore,                   | 55           |
| <b>Paraffin Wax—</b>         |              |
| Paris,                       | £55          |
| Rouen,                       | 130          |
| Spain,                       | 22           |
| Christiania,                 | 58           |
| Rotterdam,                   | 14 c.        |
| Antwerp,                     |              |
| Barcelona,                   |              |
| Boston,                      |              |
| Kume,                        |              |
| Venice,                      |              |
| Bordeaux,                    |              |
| Stockholm,                   |              |
| <b>Potash Salts—</b>         |              |
| Mexico City,                 | £360         |
| <b>Potassium Bichromate—</b> |              |
| Antwerp,                     | £196         |
| Ghent,                       | 375          |
| Melbourne,                   | 44           |
| Paris,                       | 122          |
| U.S.A.,                      | 1,480        |
| Barcelona,                   | 1,887        |
| Rouen,                       | 601          |
| <b>Salt—</b>                 |              |
| Brisbane,                    | 99 t. 5 c.   |
| <b>Sheep Dip—</b>            |              |
| B. Ayres,                    | £213         |
| <b>Soap—</b>                 |              |
| Adelaide,                    | 1 t. 19½ c.  |
| Mauritius,                   | 5            |
| New York,                    | 2 13         |
| Natal,                       | 2 11½        |
| Curacao,                     | 2 7          |
| Grenada,                     | 5 11         |
| Trinidad,                    | 13 8½        |

## Sodium Bichromate—

|                 |             |
|-----------------|-------------|
| France,         | 4 t. 18½ c. |
| Ghent,          | 4 2½        |
| Paris,          | 2 2         |
| Barcelona,      | 10 19       |
| Rouen,          | 15 19       |
| <b>Tallow—</b>  |             |
| Mauritius,      | 10 t. 4 c.  |
| Rotterdam,      | 55          |
| <b>Treacle—</b> |             |
| Christiania,    | 18 t. 5 c.  |
| Gothenburg,     | 5 5½        |
| Stockholm,      | 12 17       |

## Ultramarine—

U.S.A.,

## TYNE.

Week ending May 16th.

|                          |            |       |
|--------------------------|------------|-------|
| <b>Alkali—</b>           |            |       |
| Antwerp,                 | 10 t. 7 c. |       |
| Rotterdam,               | 61 2       |       |
| <b>Alumina Hydrate—</b>  |            |       |
| Hamburg,                 | 5 t. 4 c.  |       |
| <b>Antimony—</b>         |            |       |
| Hamburg,                 | 3 t.       |       |
| Rotterdam,               | 7 10 c.    |       |
| Barcelona,               | 2 16       |       |
| Montreal,                | 6          |       |
| <b>Bleaching Powder—</b> |            |       |
| Abo,                     | 9 t. 8 c.  |       |
| Antwerp,                 | 61 11      |       |
| Hamburg,                 | 5          |       |
| Rotterdam,               | 10 16      | 1 cs. |
| Copenhagen,              | 2 2        |       |
| Drontheim,               | 10 2       |       |
| Christiania,             | 15 5       |       |

## Borax—

Aarhuus, 1 t. 10 c.

## Caustic Soda—

|            |           |
|------------|-----------|
| Antwerp,   | 5 t. 8 c. |
| Hamburg,   | 9 16      |
| Barcelona, | 35 12     |
| Montreal,  | 14 10     |

## Litharge—

Rotterdam, 10 c.

## Magnesia—

Antwerp, 1 t. 12 c.

Hamburg, 3

Barcelona, 8 5

## Manure—

Valencia, 332 t.

Reval, 147 6 c.

## Paint—

Antwerp, 5 t. 5 c.

Hamburg, 7

## Phosphorus—

Valencia, 4 t. 8 c.

## Plumbago—

Bergen, 4 c.

## Soda—

Wasa, 24 t. 10 c.

Wyburg, 4 6

Helsingfors, 11

Abo, 3 17

Constantinople, 24 16

Smyrna, 8 2

Aarhuus, 25 12

Frederickshavn, 5

Elsinore, 44 1

Christiania, 10

Bergen, 11 5

## Soda Ash—

Abo, 80 t. 5 c.

Antwerp, 5 6

Christiania, 5 8

## Sodium Carbonate—

Wyburg, 19 t. 14 c.

## Sodium Hyposulphate—

Callao, 1 t. 16 c.

## Sodium Hyposulphite—

Hamburg, 8 t. 7 c.

Barcelona, 1 1

## Sodium Sulphate—

Skutskar, 770 t.

Gothenburg, 274

## Sulphur—

Wyburg, 20 t.

Gothenburg, 70

## Tallow—

Hamburg, 1 t. 5 c.

## Tar—

Wasa, 6 t. 6 c.

## White Lead—

Abo, 1 c.

Odessa, 2 t. 6 c.

Copenhagen, 1 16

## GOOLE.

Week ending May 15th.

|                                          |                |  |
|------------------------------------------|----------------|--|
| <b>Benzol—</b>                           |                |  |
| Boulogne,                                | 50 cks.        |  |
| Rotterdam,                               | 24             |  |
| <b>Chemicals (otherwise undescribed)</b> |                |  |
| Harlingen,                               | 1 ck.          |  |
| <b>Coal Products (otherwise undes.)</b>  |                |  |
| Antwerp,                                 | 6 cks.         |  |
| Ghent,                                   | 1              |  |
| Hamburg,                                 | 31             |  |
| Rotterdam,                               | 7 6 cs.        |  |
| <b>Dyestuffs (otherwise undescribed)</b> |                |  |
| Ghent,                                   | 5 cks.         |  |
| <b>Manure—</b>                           |                |  |
| Bruges,                                  | 200 bgs.       |  |
| Ghent,                                   | 100            |  |
| Rotterdam,                               | 995            |  |
| <b>Pitch—</b>                            |                |  |
| Antwerp,                                 | 212 t.         |  |
| Dunkirk,                                 | 53             |  |
| <b>GRIMSBY.</b>                          |                |  |
| Week ending May 16th.                    |                |  |
| <b>Alkali—</b>                           |                |  |
| Dieppe,                                  | 7 pks.         |  |
| Hamburg,                                 | 5 cs.          |  |
| <b>Chemicals (otherwise undescribed)</b> |                |  |
| Hamburg,                                 | 25 dms.        |  |
| <b>Coal Products (otherwise undes.)</b>  |                |  |
| Dieppe,                                  | 107 cks. 3 cs. |  |
| Hamburg,                                 | 4 pks.         |  |
| Rotterdam,                               | 39             |  |



## PRICES CURRENT.

WEDNESDAY, MAY 27TH, 1896

PREPARED BY MESSRS. HIGGINBOTTOM AND CO., 116, PORTLAND STREET, MANCHESTER.

The values stated are F.O.R. at maker's works, or at usual ports of shipment in U.K. The price in different localities may vary.

## Acids:—

|                                         | £          | s.   | d.      |
|-----------------------------------------|------------|------|---------|
| Acetic, 25 % and 40 % .. .. .           | per cwt.   | 6/   | 9/-     |
| „ Glacial .. .. .                       | „          | 40/- |         |
| Arsenic S.G., 2000° .. .. .             | „          | 1    | 2 0     |
| Fluoric .. .. .                         | per lb.    | 0    | 0 3 3/4 |
| Muriatic (Tower Salts), 30° Tw. .. .. . | per bottle | 0    | 0 10    |
| „ (Cylinder), 30° Tw. .. .. .           | „          | 0    | 3 0     |
| Nitric 80° Tw. .. .. .                  | per lb.    | 0    | 0 1 3/4 |
| Nitrous .. .. .                         | „          | 0    | 0 1 3/4 |
| Oxalic .. .. .                          | nett       | 0    | 0 3 3/4 |
| Phosphoric, 1750° .. .. .               | „          | 0    | 1 0     |
| Picric .. .. .                          | „          | 0    | 0 1 1   |
| Sulphuric (fuming 50 %) .. .. .         | per ton    | 15   | 10 0    |
| „ (monohydrate) .. .. .                 | „          | 5    | 10 0    |
| „ (Pyrites, 168°) .. .. .               | „          | 3    | 0 0     |
| „ „ 150° .. .. .                        | „          | 1    | 5 0     |
| „ (free from arsenic, 145°) .. .. .     | „          | 1    | 7 6     |
| Sulphurous (solution) S.G. 1025 .. .. . | „          | 3    | 0 0     |
| Tannic (pure) .. .. .                   | per lb.    | 0    | 1 2 1/2 |
| Tartaric .. .. .                        | „          | 0    | 1 3     |
| Arsenic, white powdered .. .. .         | per ton    | 23   | 0 0     |
| Alum (loose lump) .. .. .               | „          | 4    | 10 0    |
| Alumina Sulphate (pure) .. .. .         | „          | 4    | 12 6    |
| Aluminoferric .. .. .                   | „          | 2    | 5 0     |
| Aluminium .. .. .                       | per lb.    | 0    | 2 10    |
| Ammonia, Anhydrous .. .. .              | „          | 0    | 1 4     |
| „ 880=28° B. .. .. .                    | per lb.    | 0    | 0 2 3/4 |
| „ =24° B. .. .. .                       | „          | 0    | 0 1 3/4 |
| „ Carbonate .. .. .                     | nett       | 0    | 0 3     |
| „ Muriate .. .. .                       | per ton    | 22   | 0 0     |
| „ (sal-ammoniac) 1st & 2nd .. .. .      | per cwt.   | 39/- | 37/-    |
| „ Nitrate .. .. .                       | per ton    | 37   | 10 0    |
| „ Phosphate .. .. .                     | per lb.    | 0    | 0 6 1/2 |
| „ Sulphate (grey) London .. .. .        | per ton    | 8    | 2 6     |
| „ (grey) Hull .. .. .                   | „          | 8    | 2 6     |
| Aniline Oil (pure) .. .. .              | per lb.    | 0    | 0 7 3/4 |
| Aniline Salt .. .. .                    | „          | 0    | 0 6 3/4 |
| Antimony .. .. .                        | per ton    | 30   | 0 0     |
| „ (tartar emetic) .. .. .               | per lb.    | 0    | 0 9 1/2 |
| „ (golden sulphide) .. .. .             | „          | 0    | 0 10    |
| Barium Chloride .. .. .                 | per ton    | 7    | 0 0     |
| „ Carbonate (native) .. .. .            | „          | 3    | 10 0    |
| „ Sulphate (native levigated) .. .. .   | „          | 42/6 | to 65/- |
| Bleaching Powder, 35 % .. .. .          | nett       | 6    | 17 6    |
| „ Liquor, 7 % .. .. .                   | „          | 3    | 10 0    |
| Bisulphide of Carbon .. .. .            | „          | 12   | 10 0    |
| Chromium Acetate (crystal) .. .. .      | per lb.    | 0    | 0 6     |
| Calcium Chloride .. .. .                | per ton    | 2    | 2 6     |
| China Clay (at Runcorn) in bulk .. .. . | „          | 15/- | to 30/- |

## Coal Tar Products and Dyes:—

|                                            |                   |    |          |
|--------------------------------------------|-------------------|----|----------|
| Alizarine (artificial) 20 % .. .. .        | nett per lb.      | 0  | 0 7      |
| Magenta .. .. .                            | „                 | 0  | 3 9      |
| Anthracene, 30 % A, f.o.b. London .. .. .  | per unit per cwt. | 0  | 0 11 1/2 |
| Benzol, 90 % .. .. .                       | per gallon        | 0  | 2 4 1/2  |
| „ 50/90 .. .. .                            | „                 | 0  | 2 1      |
| Carbolic Acid (crystallised 40°) .. .. .   | per lb.           | 0  | 0 7      |
| „ (crude 60°) .. .. .                      | per gallon        | 0  | 2 1      |
| Creosote (ordinary) .. .. .                | „                 | 0  | 0 1      |
| „ (filtered for Lucigen light) .. .. .     | „                 | 0  | 0 1 3/4  |
| Crude Naphtha 30 % @ 120° C. .. .. .       | „                 | 0  | 0 8      |
| Grease Oils, 22° Tw. .. .. .               | per ton           | 2  | 10 0     |
| Pitch, f.o.b. Liverpool or Garston .. .. . | „                 | 1  | 12 6     |
| Solvent Naphtha, 90 % at 160° .. .. .      | per gallon        | 0  | 1 3      |
| „ Lucigen and Wells Oils .. .. .           | „                 | 0  | 0 2      |
| Copper .. .. .                             | per ton           | 46 | 11 3     |
| „ Sulphate .. .. .                         | „                 | 19 | 0 0      |
| „ Oxide (copper scales) .. .. .            | „                 | 42 | 10 0     |
| Glycerine (crude) .. .. .                  | „                 | 36 | 0 0      |
| „ (distilled S.G. 1250°) .. .. .           | „                 | 75 | 0 0      |
| Iodine .. .. .                             | nett, per oz.     | 0  | 0 9      |
| Iron Sulphate (copperas) .. .. .           | per ton           | 1  | 7 6      |
| „ Sulphide (antimony slag) .. .. .         | „                 | 2  | 0 0      |
| Lead (sheet) for cash .. .. .              | „                 | 12 | 5 0      |
| „ Litharge Flake (ex ship) .. .. .         | „                 | 14 | 10 0     |
| „ Acetate (white) .. .. .                  | „                 | 21 | 10 0     |
| „ „ brown .. .. .                          | „                 | 15 | 0 0      |
| „ Carbonate (white lead) pure .. .. .      | „                 | 16 | 0 0      |
| „ Nitrate .. .. .                          | „                 | 19 | 0 0      |

|                                         |            |    |         |
|-----------------------------------------|------------|----|---------|
| Lime, Acetate (brown) (ex ship) .. .. . | per ton    | 4  | 5 0     |
| „ „ (grey) (ex ship) .. .. .            | „          | 7  | 7 6     |
| Magnesium (ribbon and wire) .. .. .     | per oz.    | 0  | 2 3     |
| „ Chloride (ex ship) .. .. .            | per ton    | 2  | 7 6     |
| „ Carbonate .. .. .                     | per cwt.   | 1  | 17 6    |
| „ Calcined Magnesia .. .. .             | per ton    | 9  | 15 0    |
| „ Sulphate (Epsom Salts) .. .. .        | per ton    | 2  | 15 0    |
| Manganese, Sulphate .. .. .             | „          | 16 | 10 0    |
| „ Borate .. .. .                        | per cwt.   | 2  | 15 0    |
| „ Ore, 70 % .. .. .                     | per ton    | 3  | 15 0    |
| Methylated Spirit, 61° O.F. .. .. .     | per gallon | 0  | 1 8     |
| Naphtha (Wood), Solvent .. .. .         | „          | 0  | 3 0     |
| „ „ Miscible, 60° O.F. .. .. .          | „          | 0  | 3 1 1/4 |

|                                                            |               |    |         |
|------------------------------------------------------------|---------------|----|---------|
| Oils:—                                                     |               |    |         |
| Cotton-seed .. .. .                                        | per ton       | 17 | 0 0     |
| Linseed .. .. .                                            | „             | 20 | 0 0     |
| Petroleum, American .. .. .                                | per gallon    | 0  | 0 6 1/2 |
| Stearine .. .. .                                           | per ton       | 21 | 15 0    |
| Phosphorus (yellow) .. .. .                                | per lb.       | 0  | 2 2     |
| „ (red) .. .. .                                            | „             | 0  | 2 8     |
| Potassium (metal) .. .. .                                  | per oz.       | 0  | 3 7     |
| „ Bichromate .. .. .                                       | nett per lb.  | 0  | 0 4 3/4 |
| „ Carbonate, 90% (ex ship) .. .. .                         | per ton       | 16 | 15 0    |
| „ Chlorate .. .. .                                         | per lb.       | 0  | 0 4 1/4 |
| „ Cyanide, 98% .. .. .                                     | „             | 0  | 1 2     |
| „ Hydrate (Caustic Potash) 90 % .. .. .                    | per ton       | 24 | 10 0    |
| „ „ (Caustic Potash) 75/80 % .. .. .                       | „             | 20 | 10 0    |
| „ „ (Caustic Potash) 70/75 % .. .. .                       | „             | 19 | 10 0    |
| „ Nitrate (refined) .. .. .                                | per cwt.      | 1  | 1 6     |
| „ Permanganate .. .. .                                     | per cwt.      | 3  | 7 6     |
| „ Prussiate Yellow .. .. .                                 | per lb.       | 0  | 0 7 1/4 |
| „ Sulphate, 90 % (ex ship) .. .. .                         | per ton       | 9  | 15 0    |
| „ Muriate, 80 % (do.) .. .. .                              | „             | 8  | 10 0    |
| Silver (metal) .. .. .                                     | per oz.       | 0  | 2 7 1/2 |
| „ Nitrate .. .. .                                          | „             | 0  | 2 0     |
| Sodium (metal) .. .. .                                     | per lb.       | 0  | 2 11    |
| „ Carb. (refined Soda-ash) 48 % .. .. .                    | nett per ton  | 4  | 15 0    |
| „ „ (Caustic Soda-ash) 48 % .. .. .                        | „             | 4  | 5 0     |
| „ „ (Carb. Soda-ash) 48 % .. .. .                          | „             | 4  | 0 0     |
| „ „ (Alkali) 58 % .. .. .                                  | „             | 3  | 15 0    |
| „ „ (Soda Crystals) .. .. .                                | „             | 2  | 0 0     |
| „ Acetate (ex-ship) .. .. .                                | „             | 14 | 7 6     |
| „ Arseniate, 45 % .. .. .                                  | „             | 15 | 0 0     |
| „ Chlorate .. .. .                                         | per lb.       | 0  | 0 6     |
| „ Borate (Borax) .. .. .                                   | nett, per ton | 20 | 0 0     |
| „ Bichromate .. .. .                                       | per lb.       | 0  | 0 3 3/4 |
| „ Hydrate (77 % Caustic Soda) (f.o.b.) net pr. ton .. .. . | „             | 9  | 7 6     |
| „ „ (74 % Caustic Soda) .. .. .                            | „             | 8  | 7 6     |
| „ „ (70 % Caustic Soda) .. .. .                            | „             | 7  | 7 6     |
| „ „ (60 % Caustic Soda) .. .. .                            | „             | 6  | 7 6     |
| „ „ (60 % Caustic Soda, cream) (f.o.b.) .. .. .            | „             | 6  | 7 6     |
| „ Bicarbonate .. .. .                                      | „             | 6  | 10 0    |
| „ Hyposulphite .. .. .                                     | „             | 5  | 10 0    |
| „ Manganate, 25% .. .. .                                   | „             | 15 | 0 0     |
| „ Nitrate (95 %) ex-ship Liverpool .. .. .                 | per cwt.      | 0  | 8 0     |
| „ Nitrite, 98 % .. .. .                                    | per ton       | 30 | 0 0     |
| „ Phosphate .. .. .                                        | „             | 12 | 15 0    |
| „ Silicate (glass) .. .. .                                 | per ton       | 4  | 10 0    |
| „ „ (liquid, 100° Tw.) .. .. .                             | „             | 3  | 10 0    |
| „ Stannate, 40 % .. .. .                                   | per cwt.      | 3  | 2 9     |
| „ Sulphate (Salt-cake) .. .. .                             | per ton       | 1  | 3 6     |
| „ „ (Glauber's Salts) .. .. .                              | „             | 1  | 10 0    |
| „ Sulphide .. .. .                                         | „             | 7  | 0 0     |
| „ Sulphite .. .. .                                         | „             | 5  | 15 0    |
| Strontium Hydrate, 100% .. .. .                            | „             | 8  | 0 0     |
| Sulphocyanide Ammonium, 95 % .. .. .                       | per lb.       | 0  | 0 6 1/4 |
| „ Barium, 95 % .. .. .                                     | „             | 0  | 0 4 1/4 |
| „ Potassium .. .. .                                        | „             | 0  | 0 7     |
| Sulphur (Flowers) .. .. .                                  | per ton       | 6  | 5 0     |
| „ (Roll Brimstone) .. .. .                                 | „             | 5  | 10 0    |
| „ Brimstone: Best Quality .. .. .                          | „             | 3  | 12 6    |
| Superphosphate of Lime (26%) .. .. .                       | „             | 2  | 17 6    |
| Tallow .. .. .                                             | „             | 19 | 10 0    |
| Tin Crystals .. .. .                                       | per lb.       | 0  | 0 5 1/4 |
| „ English Ingots .. .. .                                   | per ton       | 64 | 0 0     |
| Zinc (Spelter) .. .. .                                     | „             | 17 | 12 6    |
| „ Chloride (solution, 100° Tw.) .. .. .                    | „             | 5  | 2 6     |



# THE CHEMICAL TRADE JOURNAL AND OIL, PAINT and COLOUR REVIEW.

Publishing Offices: 32, BLACKFRIARS STREET, MANCHESTER.

No. 472.

SATURDAY, JUNE 6, 1896

Vol. XVIII.

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**DAVIS BROS., 32, Blackfriars Street, MANCHESTER.**

Our Registered Telegraphic Address is—

“Expert, Manchester.”

NATIONAL TELEPHONE 3060.

Terms of Subscription, commencing at any date, to the *Chemical Trade Journal*,—payable in advance,—including postage, wherever sent, are as follows:—

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| Early (52 numbers)       | 12s. 6d. |
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## CURRENT TOPICS.

### THE CARRIAGE OF EXPLOSIVES.

THE recently published Blue Book on this subject contains a considerable amount of interesting information about the state of the industry and the cases in which the regulations for the transportation of explosives have been infringed.

The Act is one that has proved exceptionally beneficial. Though there are nine factories at which nitro-glycerine is made and 14 smokeless powder works, there have only been ten fatalities due to accidents during the past twelve months, thus affording a most satisfactory contrast with the number that took place before the inception of the Act.

There are several instructive cases in which certain irregularities in the methods of transport are described, from one of which it would appear that Manchester is not a port authorised for the importation of explosives.

The necessity of strictly enforcing the regulations needs no emphasising, but among some of the cases there is evidence that red-tapeism is at times apt to be allowed to run rampant.

A pointed contrast is to be noted between the recent case against the New Explosives Co. and the record of the procedure followed in dealing with a cargo of bellite imported contrary to regulations.

In the former case though there were extenuating circumstances, it was just as well that the law should be severely enforced. “All's well that ends well” is only true when the risks are run by those who cause them.

It is of the greatest importance that the slightest tendency to laxity in regard to the carriage of explosives should be promptly and effectively checked. Otherwise, although nothing may result nine times out of ten, there is always the risk, the potentiality of which is sufficient on the tenth occasion to lead to an accident similar to the Johannesburg catastrophe.

In the Bellite case the fault lay in the fact that the explosive was imported in boxes, the lids of which were fastened with uncovered screws and nails. Presumably such a condition was dangerous, or, to say the least, risky. The journey fortunately had been safely achieved, and one would think that the authorities would have had the error remedied as speedily as possible, enforcing the importance of the oversight by an adequate fine. On the contrary some mind, hopelessly blinded by officialism, adopted a course which borders, if not more than borders, on the ludicrous. The consignment was ordered back to the port of origin, so that it might then be properly packed and once more despatched. A fine equal to the cost of the double journey and re-packing would have been just as impressive, much safer, and far more consistent with the spirit and aim of the regulations.

### SCIENCE AS AN AID TO AGRICULTURE.

The growing depression in the agricultural industry has formed the text of so many homilies during the past few



months, from so many sources and such diverse aspects, that there is little left to be said, and very few who want to hear even that little. It is now beyond doubt a case in which self-help is most wanted and least exercised. In the midst of all the turmoil about rates, tithes, and reduced tents, science keeps steadily on, contributing mite after mite to the now respectable store of knowledge that has been garnered for the benefit of the next generation of farmers, if such a *genus* will exist then. It is with one of the latest of these contributions, which is of decided interest to the chemical trade, that we shall concern ourselves, and leave the moral to be pointed by those who have time to cast metaphorical pearls before hyperbolic swine by giving good counsel to the irreparably ignorant.

It is well-known that the chief drawback to the forms of nitrogenous fertilizers most popular at the present time is the liability to be washed out of the soil, so that in many cases if anything happens to the crop, practically all the fertilizer is lost, as well as having been used to no purpose. An ideal fertilizer would therefore be one which would only decompose slowly to form ammonia, and at the same time be insoluble. Advantage has apparently been taken of the properties of silicon nitride, which are favourable to the achievement of the desired end. This compound is practically unknown commercially, and, though the behaviour of the compound under the influence of moisture and carbon dioxide is set forth in the patents we abstract in this issue, there is no mention of the method of manufacture beyond the bare statement that recently a process has been employed which enables the product to be made on the large scale at a paying figure.

According to the latest authorities on solubility, silicon nitride is only soluble in hydrofluoric acid, which practically amounts to being insoluble, but it undoubtedly gives ammonium carbonate when heated in a stream of carbon dioxide and steam, while in the presence of moist air it is slowly decomposed, yielding ammonia. Better still, it is not affected by aqueous alkalies, so that it will practically only be decomposed in the soil by the action of rain charged with carbon dioxide. It can thus be used in conjunction with almost any other fertiliser. An objection may be raised that its efficacy will depend largely upon the season, for it remains to be seen how this new source of nitrogen will act in weather as dry as that we have been experiencing. Whatever the patentee's method of manufacture may be, there is one way which at all events sounds feasible, and that is the fusion of quartz and gas carbon in a blast furnace, which gives an impure product, containing a fair proportion of the nitride. So far the proposal promises well, but much remains to be proved by a practical application in agriculture, the experiments in connection with which cannot fail to be most interesting. We shall expect to be hearing more of this compound in course of time.

#### THE WATER SUPPLY.

The prolongation of the drought is again causing some trouble to those who are not fortunate enough to be in possession of almost limitless supplies, as is the case with Liverpool and Manchester. In the latter city the benefits of the Thirlmere scheme must now be felt and appreciated to the full after the trying experiences of 1887 and one or two subsequent years. The position of those cities, where the constant and plentiful supply of pure water is practically assured, must just now make many other places envious to a degree. It is not unnatural that, under such circumstances, attention should be paid to the necessity of following the example of larger cities on a less extensive scale. The chief difficulty,

however, appears to be the source of supply. To judge by the turn things have recently taken, those who have a plentiful and natural supply of water are beginning to look with disfavour on any efforts to tap the same for the benefit of their less fortunate brethren. Even where the idea is not strenuously opposed a very substantial *quid pro quo* is demanded. It must be admitted, however, that the exaction of the latter is very justifiable even though it does seriously complicate the case of those who are at one and the same time seeking and needing water.

#### MERSEY AND IRWELL JOINT COMMITTEE.

A MEETING of the Mersey and Irwell Joint Committee was held on Monday at the offices, Mosley-street, Manchester, Mr. Alderman J. Thompson presiding. The report of the Chief Inspector (Mr. R. A. Tatton) gave particulars as to the progress made by various local authorities in the provision of works necessary to the purification of rivers and streams in the watershed. Good progress had, it appeared, been made by the Chadderton Urban District Council with their outfall works. At Hollingworth the District Council had commenced the construction of outfall works, which, it was expected, would be completed in a month. At Droylsden the sewage was being treated in the tanks. There had been considerable delay on the part of the Bredbury and Romiley Urban District Council in commencing the construction of outfall works, and the inspector suggested that some action should be taken in the matter. The Hayfield Rural District Council had received tenders for the construction of sewage works, which were about to be let. Serious complaint had been received as to the pollution of the Folly Brook, and inspection had traced the chief cause of pollution to the effluent from the Swinton sewage works. The Swinton and Pendlebury District Council had been communicated with, and a reply had been received stating that the Council were preparing additional land filters, and when those were completed it was hoped that a very satisfactory effluent would be turned into the Folly Brook. With respect to the pollution of the small tributary of the brook, a scheme for removing that had been placed before the Local Government Board some time ago, sanction to which was now expected. The report was adopted. Mr. T. W. Killick, chairman of the Consulting Sub-committee, moved the report of that Committee. The report recommended that extensions of time within which to construct works should be granted to the local authorities of Chadderton, Hollingworth, and Droylsden, and that steps proposed to be taken in the cases of Hayfield, Hyde, and Romiley should be adjourned. The sub-committee recommended that the Clerk be instructed to write and inform the Bury Rural Council that unless more satisfactory progress was made by them before the July meeting of the Joint Committee proceedings would be taken without further notice. The Sub-committee also recommended that letters be written to the following authorities, whose effluents were found to be unsatisfactory, viz.: Altrincham, Moss Side, Little Hulton, Knutsford Urban District Council, Marple, Stockport Rural District Council, and Hale, asking that steps be taken to improve the same. With reference to the bad samples which had been taken from the Swinton and Pendlebury sewage works, the Sub-committee recommended that the clerk be instructed to write and inform the Council that the Joint Committee could not allow any further delay to take place in the reconstruction or alteration of the works, and that failing better progress being made proceedings would be taken against them. Mr. C. Hunter said the present condition of the Mersey, the Irk, and the Medlock was exceptionally bad. He desired to know what was the present state of the Moss Side sewage works?—Mr. Tatton, the inspector, said the works were not finished.—Mr. Hunter: Is it a question of land? Have they not arranged for the land?—Mr. Tatton: No, they have the land, but they have not yet completed the tanks.—The proceedings of the Committee were approved.—Mr. J. Brierley, the chairman, submitted the report of the Chemical Sub-committee, which dealt with the effluent from a number of works and manufactories, and which recommended that in certain cases proceedings should be taken to remedy unsatisfactory conditions existing.—The report was adopted, and the meeting shortly afterwards terminated.

THE WINSFORD WATER SUPPLY.—At the meeting of the Winsford Urban Council on Wednesday, it was resolved that plans should be prepared for constructing a reservoir at a cost of £4,000. At present there is only sufficient storage for one day's consumption, and in the event of an accident to the mains it is felt that the outlook would be very serious. The supply is now limited, owing to the drought and the absence of a reservoir.



## Legal Intelligence.

### CHANCERY OF LANCASHIRE.

(Before Vice-Chancellor Hall, Q.C.)

THE COTTON SPINNING AND MANUFACTURING COMPANY, LIMITED, v. KELSALL AND KEMP, LIMITED.

On, which was heard on Tuesday, is for alleged abstraction of the water of the Naden Brook, near Rochdale, on the which stream both parties carry on business. Mr. Roby, for the defendants, applied that the plaintiffs should be ordered to furnish particulars with respect to their case. Counsel stated that the defendants alleged that the defendants had wrongfully abstracted and discharged foul water, thereby diminishing the flow of water past the plaintiffs, and had also discharged foul water, flocks, and other matter into the brook at a point at which the defendants' outfall upon the stream. The defendants desired further as to the point at which it was said they poured foul water into the brook, and also as to the nature and amount of the damage alleged to have been caused to the plaintiffs' plant and premises.

The defence to the action was an absolute denial of any and a denial of any abstraction, or, alternately, a prescriptive right.

Mr. Roby, for the plaintiffs, said it was absolutely unnecessary to establish what the point of discharge of the foul water was, as they were in possession of their own premises, and knew where they themselves. Formerly the defendants discharged the foul water into the brook, covered shaft or well. That had now been discontinued and the water was discharged into the brook.

Mr. Roby said he thought the defendants should have fair play at the point at which the discharge was said to be made.

Mr. Roby said his clients ought to be allowed to have inspection of the defendants' premises first. They had asked for leave for an order to be made by Mr. Diggle, the Heywood Corporation waterworks, that it had been refused.

Mr. Roby said he did not believe in all this sparring. If it was an honest case why did they not come to trial with it?

Mr. Roby said it was not the plaintiffs who were sparring. Their case was that the defendants had abstracted water and discharged it into the brook.

Mr. Roby said that if this sort of thing went on and the defendants did not come to trial, the Court might have to interfere and send for an order to inspect the place.

Mr. Roby said the works were entirely open to the inspection of the plaintiffs, but not to the inspection of Mr. Diggle, to whom the defendants objected because of his official position.

Mr. Roby, dealing with the application for particulars as to the pollution had caused injury to the plant and machinery, the cost of working the mill, and created an offensive smell, stated that they were dealing with persons who knew all about the nature of this pollution was.

Mr. Roby said the plaintiffs were bound to give the full information as to the case they had to meet at the trial, and were not bound to give their evidence or such particulars as would enable the defendants to so shape their case as to trap the plaintiffs.

The defendants were entitled to fair warning of what the plaintiffs complained about, but not to such particulars as on the face of the case were not directed to the information but the embarrassment of the plaintiffs. The defendants must answer without further delay the queries which had been administered by the plaintiffs, who would be in a better position to furnish fuller particulars. The plaintiffs must complete their inspection of the defendants' works, and the defendants objected on reasonable grounds to the person who had stated, the proper course was to nominate some other person. Within ten days of the interrogatories being answered or the being made, whichever was last, the plaintiffs must give particulars as they could as to the point at which the foul water was to be discharged. He also thought the defendants were entitled to fuller information with respect to the alleged damage. It was clear that the damage might arise in more ways than one: the choking of the machinery, or by acids eating into the machinery.

The defendants must also be furnished with an estimate of the amount of the damage which the plaintiffs considered they had suffered.

Mr. Roby asked for leave to appeal, as the result of the decision was that the defendants would not be able to prepare their case for trial.

Mr. Roby said he should not give leave to appeal. The detail of that character were not proper subjects for appeal. Mr. Roby added that if the inspection did not take place in due

course, the court would take the matter into its own hands and set the action down for trial.

Mr. Roby said he should be very glad for the Court to take that course.

## Our Book Shelf.

A DICTIONARY OF CHEMICAL SOLUBILITIES (INORGANIC). By A. M. Conney. 515 pp., with Appendix. London: Macmillan and Co. 1896. 15s.

Since Storer's scarce and much prized work on solubilities there has been no serious attempt to prepare a similar work, though the want has long been felt, owing to the fact that, excellent as Storer's dictionary was, it bore the date of 1864.

The present dictionary is by no means on the same lines as the old one, being confined to analysed inorganic compounds. In a way this is an advantage, since it is thus possible to render the work fairly concise, thereby facilitating reference.

Strictly speaking, all carbon compounds should be excluded, but we are pleased to see that an exception has been made in the case of carbon monoxide, dioxide, carbon disulphide, and the carbonates, cyanides, and ferrocyanides. In this way the utility of the work to the general run of chemists has been greatly enhanced, as, although a strict classification is desirable, the omission of these compounds would have been a source of trial and disappointment to many.

The work has been brought up to 1894, and though a great deal of old research is reproduced, much wisdom and discretion has been exercised in the selection of the most reliable data. The system of classification adopted and the assortment of type are excellent, but the former should be understood before using the work, and to this end we strongly advise that the fourth paragraph of the preface be carefully read. So doing will save time in the end, and be conducive to the ultimate appreciation of what is one of the most valuable additions to the chemical literature of the last decade. The closer the intimacy, the greater becomes the sense of indebtedness to the author for his conscientious labours.

WATER ANALYSIS. By J. A. Wanklyn and E. T. Chapman. 205 pp. (Tenth Edition). London: Kegan Paul, Trench, Trübner, and Co. 1896. 5s.

New editions of this well-known work have become as familiar as flowers in May, but the advent of the tenth has ample justification, owing to the changes that have been made. These are notably more detailed references to the estimation of the water residues, the substitution of a fresh chapter on the determination of the specific gravity, and a new chapter on table waters. The partial re-writing of the chapter on the albuminoid ammonia process has resulted in a less prejudiced statement of the advantages of the process, which is, nevertheless, even more convincing owing to its increased impartiality.

There are still a few literary errors in the text that even the revision of the tenth edition has failed to eliminate, but the many important additions and working wrinkles condone such an oversight, even in so late an edition of this now generally recognised authority on the analysis of waters.

HANDBOOK FOR THE BIO-CHEMICAL LABORATORY. By J. A. Mandel. 101 pp. London: Chapman and Hall, Ltd. 1896. 6s. 6d.

There are many unique points about this little handbook that will recommend it to all workers in bio-chemical laboratories.

It is divided into two sections, the first giving about sixty or more practical methods of preparing the most important substances that enter into the composition of the fluids and tissues of the animal body.

In the second part over two hundred tests are described. These are arranged in alphabetical order, the tests being designated by the names of the originators. In this way reference to any one test is but the work of a moment, while the addition of a contents table of the preceding preparations equally facilitates reference in this section also.

In short, a modest, but thoroughly practical and useful work, which is neatly and judiciously got up.

THE OLD LIGHT AND THE NEW. By William Ackroyd. 102 p.p. illustrated. London: Chapman and Hall, Ltd. 1896. 1s. 6d. net.

This brochure is a popular, but scientific account of the origin and nature of the new rays recently discovered by Prof. Röntgen.

As such it is as successful as can be expected with so difficult a subject, which does not lend itself at all freely to popularisation. A considerable part of the brochure is taken up with a lecture on the chemistry of colour, read by the author, late last year, and which is full of suggestion and interest.



THE LIQUEFACTION OF GASES. By M. Faraday. (1823-1845.) 79 pp. Edinburgh: W. F. Clay. 1896. 2s. nett.

This, the twelfth of the series of Alembic Club reprints, comes at an opportune moment, as the subject with which it deals has lately become prominently interesting, owing to the work that is being done by Prof. Dewar and others.

There is always something fascinating about the accounts of Faraday's work, and this fact renders this reprint of his work on this subject one of the most interesting of the series, especially as the papers of Mr. Northmore, to which reference is frequently made, are added in the form of an appendix.

DIE FORTPLANZUNGS-GESCHWINDIGKEIT DER SCHWERKRAFT-STRAHLEN. 92 pp., illustrated. LICHT-ELEKTRICITÄTS-UND X-STRAHLEN. 54 pp. Both by R. Mewes. Berlin: M. Krayn. 1896. 2 marks and 1.50 m. each.

The former of these pamphlets is an able contribution to the subject of gravitation, dealing mainly with the rate of the transmission of the force and the theory of its action.

The latter is one of the most highly scientific and valuable of the contributions that have been made to the theories bearing on the origin of the Röntgen rays. As such it has aroused so much interest in the scientific world that a second edition has already been called for.

METALLIC STRUCTURES: CORROSION AND FOULING, AND THEIR PREVENTION. By J. Newman. 374 pp. London: E. and F. N. Spon. 1896.

The work is divided into two parts, the first of which treats on the preservation of iron and steel structures, the chapters on rapid corrosion and the corrosive action of soils, &c., being particularly useful. The other main features are the chapters on the comparative corrosibility of steel and cast iron, galvanic action in relation to corrosion, and special references to the corrosion of the various parts and specific forms of metallic structures.

Part II. refers more particularly to the prevention of fouling and corrosion in structures submerged in sea and fresh water. The chapters on the paints, oils, and varnishes used for the purposes of protection are noteworthy, while the concluding chapters on painting specifications and scamping tricks are especially useful. There is apparently no reference to the Barff-Bower process, but there is an excellent chapter in part I. on the influence of the scale of cast iron and steel. The book is practically confined to the treatment of metallic building structures and the use and preparation of preservative paints and compositions.

Within its sphere it is, however, an excellent book, being a thoroughly practical collection of aids and helpful information, in which an elaborate consideration of the corroding agencies is carefully avoided, since such information can be found at length in reliable works on chemistry, thus leaving more room for recording particulars of all the most important tests and results that bear on the prevention of corrosion. A knowledge of the corroding agencies is necessary, but the prevention of the corrosion itself is more to the point.

### A FIBROUS FILLING FOR PAPER.

A USEFUL material for filling paper has recently been introduced under the name of "Nematolith." Owing to its fibrous nature it promises to prove of great utility as a filler, as in this particular it possesses a very decisive advantage over the run of materials used for this purpose.

The new substance is, chemically speaking, a member of the asbestos family, but it has an advantage over the latter owing to its freedom from the iron, lime, and sulphur compounds that are usually found in crude mineral asbestos, the raw material from which Nematolith is specially prepared for paper-making purposes testing on analysis 96% of pure silicate of magnesia. Owing to its exceptional whiteness and purity, Nematolith stands far and away in advance of all the other mineral fillings that have been hitherto introduced. It improves the white tone of the paper in a really remarkable manner, and is therefore as useful in the preparation of the finest papers as well as those of inferior quality. It is also economical, as by its use the appearance of an indifferent paper can be materially improved by the addition of a comparatively small quantity of filling. Above all, in cases where unsuitable or impure water has to be contended with in the manufacture, this new filling will prove of great service.

Owing to its fibrous nature, Nematolith is readily retained by the pulp, which is proved by the fact that on incinerating the paper when finished as much as 95% of the material added is found in the finished sheet. It is also permanent, since it is unattacked by either

acids or alkalies, and is even unaffected by sulphurous acid, both of which points afford additional testimony to its economy.

The determination of the ash has shown that even when employing as much as 20% practically the whole is retained in the finished sheet. This property gives it a great pull over china clay, or blanc fixe, etc., with which 50% and even 60% is lost during the process of manufacture, and this quality must be taken into consideration when comparing it in price with the other materials usually used for filling purposes.

The above claims are substantiated by the fact that the specific gravity is very low. Furthermore, while a small addition suffices to effect the desired improvement in the whiteness, if a large proportion is employed the paper does not lose in body or touch.

This substance has been the subject of a number of experiments and investigations, all of which have given satisfactory results, and at the same time have brought out the following points:—When employed in large proportions even it requires no sizing, and a perfect filling with the fibre is obtained. A paper containing up to 20% of this filling does not scratch under the pen, and so cause the ink to run and blot. Being of a soapy nature to the touch, it is very valuable in hot pressing or callendering, enabling a very highly glazed surface to be produced. It can be introduced into the beater in the crude state, provided that it is beaten long enough to ensure a uniform mixture with the pulp. It is, however, in all cases preferable to use a separate preparation kettle. Thus the best method of using it, and one that is largely adopted by several paper-makers, is to boil a 100 kilos of Nematolith with 1,000 litres of water (about 220 lbs. in 220 gallons of water), and then add a quantity of starch so as to more perfectly fix the filling. The addition of the starch is not, however, absolutely necessary. The whole need not be filtered, as the Nematolith is entirely free from all impurities.

It is introduced after the paper has been sized. A number of paper-makers in Belgium, France, Holland, Germany, and Austria have been using this new filler with most satisfactory results.

### EXPORTS OF ALKALI AND BLEACH.

THE following returns, which are taken from the official foreign and colonial statistics of the United Kingdom, give the amount and value of alkali and bleaching materials shipped to the undermentioned countries for month ending April, 1896, as compared with 1895:—

| Port.                    | 1895.   | 1896.   | 1895.   | 1896.   |
|--------------------------|---------|---------|---------|---------|
|                          | Cwts.   | Cwts.   | £       | £       |
| Russia .....             | 7,268   | 15,104  | 2,277   | 4,375   |
| Sweden and Norway ....   | 14,992  | 9,242   | 3,407   | 2,017   |
| Germany .....            | 19,103  | 10,530  | 5,580   | 3,078   |
| Holland .....            | 8,022   | 10,241  | 1,883   | 2,009   |
| France .....             | 3,635   | 5,041   | 1,207   | 1,804   |
| Spain and Canaries ....  | 27,705  | 22,006  | 9,623   | 7,506   |
| Italy .....              | 17,676  | 18,054  | 5,583   | 5,499   |
| United States .....      | 273,836 | 242,749 | 59,510  | 48,829  |
| Australasia .....        | 16,261  | 23,628  | 4,704   | 7,051   |
| British North America .. | 12,839  | 22,363  | 3,020   | 5,438   |
| Other countries .....    | 83,214  | 85,082  | 23,694  | 24,133  |
| Total .....              | 484,611 | 464,040 | 120,488 | 111,739 |

### BLEACHING POWDER, ETC.

| Port.                 | 1895.   | 1896.  | 1895.  | 1896.  |
|-----------------------|---------|--------|--------|--------|
|                       | Cwts.   | Cwts.  | £      | £      |
| United States .....   | 76,020  | 58,945 | 27,848 | 19,912 |
| Other countries ..... | 38,698  | 34,674 | 14,338 | 12,062 |
| Total .....           | 114,718 | 93,619 | 42,186 | 31,974 |

THE SAFEST AND MOST DANGEROUS ILLUMINANTS.—Insurance companies have made up their minds that electric lighting, when the wiring is well done (and they have formulated special rules on the subject), is the safest of all illuminants. Statistics show the following comparative risks: Fires in one year from paraffin and kerosene, 259; from gas, 110; matches used for gas, 35; candles, 88; arc electric lights, seven; and incandescent electric lights, only one.

END OF THE DARLINGTON STEEL WORKS.—The decision to wind up the Darlington Steel and Iron Works will remove another of the rolling mills from Darlington. Blast furnaces and several rolling mills that twenty years ago were productive there have been dismantled. The large locomotive works give alternative employment, but the removal of the works that have been hinted at is proof that the Skarnside town feels the competition keenly in the metallurgical trade.



## The Patent List.

*This list is compiled from Official sources in the Manchester Laboratory, under the immediate supervision of E. Davis and Alfred R. Davis, who report professionally the value of Chemical Patents.*

### APPLICATIONS FOR ENGLISH LETTERS PATENT.

**Improvements in Drums for the Transport of Petroleum, etc.** D. Caird The Iron and Steel Plant Co., Ltd. 10,646. May 18.  
**Preparation of Soaps.** J. Ascough. 10,681. May 18.  
**Preparation of Manures.** F. W. Saatmann. 10,715. May 18.  
**Lead Electrodes for Accumulators.** H. O. Tudor. 10,718. May 18.  
**Improvements in Filters.** T. Linke. 10,805. May 19.  
**Improvements for Secondary Batteries.** 10,811. May 19.  
**Preparation of Glycerine and Caustic Soda from Soap Lyes.** J. Glatz and J. G. Chamberlain. 10,837. May 19.  
**Preparation of Specifically Heavy Ammonia Soda.** J. Y. Johnson. 10,842. May 19.  
**Improvements in Metallic Surfaces against Chemical and Atmospheric Action.** H. H. H. 10,864. May 19.  
**Preparation of White Lead, etc.** T. H. Cobley. 10,890. May 21.  
**Preparation of Washing Flannel, etc.** C. Drummond. 10,955. May 21.  
**Preparation of Purifying Feed Water.** J. G. Chamberlain. 10,983. May 21.  
**Preparation of Acid from Argols.** H. Rasch. 11,075. May 21.  
**Improvements in Filter.** J. A. Orme. 11,080. May 21.  
**Improvements in Solid Disinfectant.** W. S. Daff. 11,103. May 21.  
**Improvements in Traps.** J. C. R. Oke and A. Stubbs. May 21.  
**Preparation of Clarifying Fats.** A. Beveridge and J. Pursell. 11,112. May 21.  
**Preparation of Pure Alumina, Sulphate of Aluminium and Silica from Clays.** Payne. 11,160. May 22.  
**Improvements in Chemical Apparatus.** C. Dawson. 11,216. May 22.  
**Preparation of Sewage, etc.** E. W. T. Jones and J. Garfield. 11,242. May 23.  
**Preparation of Cyanides.** E. A. Williams and J. F. C. Williams. 11,326. May 23.  
**Preparation of White Lead.** Dr. Urquhart and J. M. Small. 11,328. May 23.  
**Improvements in Electrodes for Electrolytic Purposes.** E. A. G. Street. 11,338. May 23.

### EXTRACTS OF LATEST COMPLETE SPECIFICATIONS.

*These abstracts are specially prepared for the Chemical Trade Journal, and the RIGHTS of publication are RESERVED. This is the earliest issue in which abstracts of Chemical and allied patents accessible to the public.*

**Improvements in Apparatus for the Disinfection of Sewage.** P. O'Dowd. Eng. Pat. 3,877. May 4, 1895.  
A intercepting chamber is placed between the house drain and the sewer. This chamber is of rectangular shape, and may be constructed of sheet iron, or, for large systems, in masonry or brickwork. It is divided into compartments by two screens of fine wire netting, on sheet of canvas is laid. The first is placed a short distance from the inlet of the chamber so as to form an annular space in which the sewage collects. The second is situated half-way between the inlet and the outlet at the top. On the second screen a layer of peat is placed, and the rest of the space filled up with peat charcoal. The lower compartment is filled with peat charcoal only. In the upper compartment the sewage is precipitated, as it passes through the upper screen, and is precipitated in the second, and passes away without carrying with it precipitating agents. To facilitate the removal of the solid precipitate from the sewage, the screens are made detachable, simplifying the processes of cleaning and re-charging. There is no loss of sewage.

**Improvements in Fertilizing by the Aid of Artificial Nitrogenous Compounds.** H. Mehner, Savigny Platz 5, Charlottenburg, Germany. Eng. Pat. 2,700. June 27, 1895.

It is taken of the fact that silicon nitride is decomposed by moisture and weak acids to form ammonia. The chief advantages claimed are the insolubility, which prevents loss, and the ease of carriage as compared with the other forms of nitrogenous compounds. It can be used in conjunction with other fertilizers that do not contain ammonia.

**Improved Process for the Separation of Silicic Acid from Siliceous Substances.** F. Brünjes, Langelsheim, am Harz, Germany. Eng. Pat. 6,157. March 19, 1896.

Commercial attempts at decomposing clays with the waste acid from the tar or oil industries have not been successful, on account of the nauseous smell imparted to the resulting sulphate of

alumina even when heated to below 100°C. In this process the patentee decomposes argillaceous substances with vitriol in conjunction with added organic bodies, such as molasses, sugar, starch flour, etc., using from 0.1% to 0.5% for every 1% of silicic acid to be set free. The organic substances are first heated to about 90°C. with vitriol, and then added to the argillaceous substance. The product forms itself into coke-like cakes, from which the sulphate of aluminium can be easily washed out. The advantages claimed are threefold. Firstly, that colouring and badly smelling products are not formed; secondly, that the gelatinous and soluble silicic acid is easily converted into the granular and insoluble modification; and, lastly, that the sulphate of alumina when once formed is not reduced by the action of the organic compounds formed at the temperature necessary for the conversion of the silicic acid.

**Improvements in or Relating to the Manufacture of Salt.** F. P. Gutierrez, of Cabezon de la Sal, Santander, Spain. Eng. Pat. 1,729. January 24, 1896.

The object is to utilise the waste heat from furnaces in which melted or moulded salt is prepared in blocks for feeding purposes. To this end the waste heat is utilised for the evaporation of brine in suitable boilers. The residual heat can also be employed for drying the salt obtained from the evaporating boilers. An advantage attendant upon the fusion process is that the more impure qualities of rock salt as obtained from the mines can be used, the resulting product being free from impurities and quite suitable for use by animals.

## THE NAPLES SOAP TRADE.

THE speciality known as Naples soap is the subject of a section in the last British Consular report from that place. Its distinctive title is due to the fact that its main ingredient is olive oil. Ordinary olive oil is made by submitting the berries of the tree to a very high pressure and squeezing the oil out of them, but when this has been done to the utmost there remains a large mass composed of pulp and the stones of the fruit, which still contains a considerable percentage of oleaginous matter. This mass of pulp and stones is valueless in itself, and until a means had been discovered to extract the residuum of oil from it it was to all intents and purposes a waste product. The stones, it is true, were ground to a fine powder and used in the adulteration of pepper, but otherwise the mass was commercially of small value. Owing to the extent to which the olive tree is cultivated in Southern Italy, and the large quantity of oil manufactured and exported, there are few districts more favourable for collecting the refuse from the presses which forms the basis of Naples soap. Many experiments have been made from time to time by Richardson Irvine and others, who employed volatile hydrocarbons for the purpose of extracting the remaining oil from the refuse; but their processes failed, in some cases from the disagreeable smell of their products, and in others from the want of efficacy of their inventions. The best and most perfect means known was invented by Deiss, a chemist of French or Swiss origin, who by means of a strong ley of solvents, of which bi-sulphide of carbon is a prominent ingredient, extracts a greenish coloured oil from the refuse at a small cost, and of sufficient purity to form the basis of the best soaps. Messrs. Genevois et Fils are, perhaps, the most important Neapolitan house in the trade. Of industrial soaps their "Abeille 62" is very largely exported to England. It has the appearance of green and white marble, and contains 62% of olive oil, every batch being chemically tested before exportation. It is used for wool-washing, the cleansing and preparation of silks and stuffs, and also in connection with ironwork, steel, and wire-drawing. "The industrial branch of the business is far the most important and the works are being extended accordingly, as the exports amount to several hundred tons annually, and increase year by year; but the manufacture of toilet soaps is not neglected. A soap which used to be known as 'Almond shaving cream' is still largely exported to America; but, though no soap produced a finer lather, it has been beaten out of the field in England by the more portable and convenient products of our own soapmakers, who will perhaps secure the American market some day as completely as they have conquered the British market now. In cake soaps the Naples manufacturers still obtain a large amount of British patronage, and it is amusing to note that the tablets sent to Great Britain are marked 'Naples soap,' while the same soap for the local market is marked 'Elegant soap' to give it a British flavour for the Neapolitan public. Ever since the use of glycerine in the manufacture of explosives and for other commercial purposes raised its price it has fallen into disuse here, and an inferior toilet soap with sugar for its basis has only partially taken its place."

**AGRICULTURAL ECONOMICS.**—Sir Walter Gilbey, president of the Royal Agricultural Society, has offered to found at Cambridge a lectureship in the history and economics of agriculture.



## Reports of Companies.

### MESSRS. G. KYNOCH AND CO., LTD.

The directors, in their report for the year ended April 2, state that the accounts show a net profit amounting to £29,111.; to this has to be added £12,510., the amount brought forward from last year, making a sum of £41,622. The directors' fees will absorb £2,000., and the directors recommend that out of the remainder a dividend at the rate of 10 per cent. per annum, amounting to £16,000., be paid on the preference shares, and a dividend at the rate of 13 per cent. per annum, amounting to £5,200., be paid on the ordinary shares, and the balance, £18,422, carried forward. The Lion works at Witton, and the rolling mills at Lodge-road have been fully employed during the past year. The directors have taken advantage of a prosperous year to repair or replace a large proportion of the engines and machinery. The black powder mills at Worsboro' Dale have been continuously employed day and night at remunerative prices. The Arklow nitro-explosive Works have been completed, and the output raised to nearly double the contemplated amount. The Government is being supplied to the full extent of its requirements, and orders from the private trade are coming in satisfactorily. An explosion in one of the gun-cotton drying houses occurred in October last year. The damage to property was not material, but one life was unfortunately lost. The cause of the explosion has never been determined, and the directors can only say that Her Majesty's Inspector entirely exonerated the company from all responsibility and blame. The explosion, however, had the effect of stopping the company's output of cordite, and of interfering with its business in high explosives for some little time, and the directors have, consequently, found it advisable to make a portion of these explosives in England. In addition to the manufacture of cordite, the company is now making at Arklow dynamite, gelignite, and other blasting compounds. Arrangements have been made with selling agents in various places, and the directors anticipate, for the coming year, a fair contribution to the profits of the company from this source. The manufacture of nitric acid and of acetone is also carried on at Arklow. A steamer has been bought to carry the company's goods, and the purchase of a second is in contemplation. It is the intention of the directors to distribute, in December of the present year, an interim dividend of 3½ per cent. on both preference and ordinary shares. The distinction between these shares will then cease, and all the share capital will have equal rights and become of equal value. The time must shortly come when the constant and extensive developments of the company's business, which have been in progress for the last seven years, and which are still continuing, will require larger cash resources; the directors are not at present prepared to make these recommendations, but wish the shareholders to understand the position, and to know that the condition of the business already justifies, and will soon demand, an important increase and re-arrangement of the company's capital.

### SAN SEBASTIAN NITRATE COMPANY, LIMITED.

The seventh annual general meeting was held last week at Winchester House. Mr. A. R. Robertson presided, and, in moving the adoption of the report, expressed regret at the unsatisfactory results of the past year's working. Owing to the over-production and consequent low prices the nitrate industry had been passing through a period of depression, but the recent completion of the nitrate combination had placed things on a better footing. For the next three years, beginning on April 1 last, the production would be regulated so as not to exceed the consumption. Last year the total production of nitrate was 1,210,000 tons, and the consumption slightly over 1,000,000 tons, leaving a surplus of 200,000 tons. Since the combination had been in force prices had improved to between 5s. 7d. and 5s. 9d. per quintal on the coast, with every chance of going higher. The March shipments had been very large, and had therefore interfered with the further advance which had been expected. Last year they made only 9,000 tons of nitrate. They could have produced more, but, in view of the unremunerative prices obtainable, they did not work full time. So far the trial to determine what their output should be for the next three years had resulted satisfactorily, and he believed it would be found that they would be entitled to produce from 11,000 to 12,000 tons per annum. A considerable sum of money had had to be expended on their plant and machinery, and, contrary to the wish of the board, who desired to spread the cost over three years, the auditors had insisted on its being charged to the past year's revenue. Already during the current year they had made some very satisfactory sales. The board were not proposing to declare a dividend on the present occasion, but so soon as they received certain remittances from the coast, and moneys due to them for iodine, they hoped to be able to do so. He thought it would not be necessary to keep the shareholders waiting for an interim dividend longer than next month. They had liquid assets of between

£16,000. and £17,000, whereas they only owed about £4,000. In conclusion he expressed his belief that, judging by the way they started the new year, their next balance-sheet would be very different from that now submitted. Mr. G. M. Inglis seconded the motion which was unanimously adopted.

*Pascha and Jaspampa Nitrate Company, Limited.*—The report made up to December 31 shows a loss of £27,298, and, after deducting the amount of £11,981. carried forward as undivided profit from the previous year, a balance of £15,317. remains to the debit of profit and loss account.

*Mason and Barry, Limited.*—At an extraordinary general meeting held last week, at the offices, Cannon-street, Mr. Francis Ricardo presiding, the resolution passed at the meeting on the 11th ult. was confirmed, on the motion of the chairman. The resolution was for reducing the capital of the company from £840,000. in shares of £4 each to £630,000. in shares of £3. each, the reduction to be effected by turning £1. a share to the shareholders.

## THE TUSCAN OLIVE OIL INDUSTRY.

THE United States Consul at Leghorn, in a recent report on olive tree and olive oil of Tuscany, says that the tree forms one of the chief agricultural resources of the province, about 270,000 acres being devoted to its cultivation, while the yield is about 6½ million gallons of oil. When obtained from sound, well-matured fruit, with proper skill and attention given to its extraction, the oil reaches the highest standard of excellence, and cannot be surpassed by the oil of any other country. It is generally known abroad as Lucca oil, the finest quality is produced in other Tuscan districts as well, such as Calci and Buti, in Pisa. The olive groves which clothe the hills extending from Pisa to Viareggio, on the Genoa-Pisa line, and from Pisa to Pontedera, on the Leghorn-Florence line, are famed for the oil they produce. The qualities of delicate flavour, fine light golden colour, medium density, and keeping long depend on the soil, topographical position of the groves, the climate, and the species of the plants. The slopes of hills, with a suitable exposure, and a rocky calcareous subsoil are the best for the production of the finest oil, though in other situations the tree may vegetate more luxuriantly. The Razzo olive tree is the best of all others for oil-producing, and is favoured in Lucca and Pisa. The best oil is made in the first months of the year. The tree attains to a great age; it may bear some hundreds of years, but the average life of the cultivated tree is thought to be from 100 to 150 years. The fruit is all hand-picked. Many favourable conditions are required to combine for the production of the best quality of Tuscan oil that it is necessarily restricted in amount, and always commands a good price. Much of what is sold as Lucca oil is, at best, a mixture of inferior Tuscan oil with the cheaper and more inferior production of Bari, in South-Eastern Italy. Much Bari oil is taken yearly to Leghorn, Lucca, and other markets in Tuscany and re-exported as Lucca oil. The Consul explains that oil may be pure, in the sense of being wholly free from adulteration, yet be rank, nauseous to the taste, and even ill-smelling. Purity alone is not enough; fine quality also is needed. There is also much adulteration of olive oil with seed oil, especially the oil of the cotton seed, which is the cheapest of all. Such oil is as far removed from fine Lucca as is cream from rank tallow. Italy alone produces 90 millions of gallons of olive oil, while the Tuscan production, as has been said, is less than seven millions. "But consumers may rest satisfied that brands of Lucca oil guaranteed by responsible and reputable firms in the trade in Tuscany are absolutely pure olive oil."

**CIRCLING THE GLOBE IN FIFTY MINUTES.**—At the recent New York Electrical Exhibition a telegraphic message was sent round the world in fifty minutes. Mr. Chauncery Depew wrote a despatch as follows:—"God created Nature's treasures, and science utilises electric power for the grandeur of the nations and the peace of the world. This was sent by President Chandler, of the Postal Telegraphs Department, who was sitting at one side of a table in the exhibition, opposite him, at the other side of the table, was Mr. Edison, waiting to receive it after its long journey. Mr. Chandler transmitted it 8.34 over the wires of the Western Union, through Chicago, Los Angeles, San Francisco, and there to Vancouver, Winnipeg, Montreal, and London, which it reached at 8.38. Thence it was sent through Lisbon, Gibraltar, Malta, Alexandria, Suez, Bombay, Madras, Singapore, Shanghai, Nagasaki, and Tokio. The message was returned by the same route, and was received by Mr. Edison in 9.1 minutes after Mr. Chandler had started it. The message was reported from each of the places mentioned as it reached it. This is the fastest piece of international telegraphing ever accomplished. The message cost at tariff rates over £30."



## ARGON AND HELIUM AMONG THE ELEMENTS.

ESSOR W. RAMSAY delivered the fifth Boyle lecture before the Oxford Junior Scientific Club on Tuesday, his subject "The Position of Argon and Helium among the Elements." Discovery of argon and of helium, like the discovery of carbon of oxygen, and of nitrogen, has brought new problems before the scientific world. To afford an idea of the necessary change of our atmosphere and the influence of Boyle, Mayow, Hayles, Rutherford, Priestley, Scheele, and Cavendish in modifying and of these primitive notions of the ancients. Portraits of these men were thrown upon the screen. The influence of Lavoisier alone was touched on, and the overthrow of the phlogistic which predicated that combustible substances when burned lost their principle named phlogiston, instead of gaining oxygen, led to. Passing on to the more immediate subject of his lecture Ramsay shortly described the discovery of argon by Lord Rayleigh and himself, and of helium, accidentally lit on during a search for a clue to guide him in attempting to form a compound of this element, which up to now had been recognised only by the presence of a yellow line in the spectrum of the solar spectrum, now appeared for the first time as a terrestrial substance. Owing to the non-activity and resistance to combination of the newly discovered elements, the usual method of determining their weights was not available. Hence purely physical methods were resorted to. The density of a gas compared with that of hydrogen, the lightest of all known elements, expressed its molecular weight compared with that of a molecule of hydrogen; and as a molecule of hydrogen was supposed on substantial grounds to consist of two atoms, the density was half the molecular weight, as was usual, with the atomic weight of hydrogen. Not all gases, however, possessed molecules consisting of two atoms; those which possessed monatomic molecules were mercury, and those borne out not merely by considerations connected with the nature of its compounds, but also by the ratio between the heats of heat required to raise its temperature when it was kept constant, on the one hand, or, on the other, when it was kept constant. Heat, according to the modern conception, is converted into work, and was therefore termed a form of energy, and the heat communicated to mercury gas, provided it was allowed to expand, was utilised solely in moving its molecules into space; while with other gases some of the communicated heat was employed in causing the atoms to move in some unknown way in relation to each other within each molecule. Both argon and helium showed the same peculiarity and behaviour, and it was legitimate to conclude, for the same reason, that in their case, too, molecule and atom were identical. Hence the densities of helium and of argon must be in the ratio of their atomic weights, inasmuch as atomic and molecular weights were the same. This gave for the atomic weights of these elements the values for helium 4.28, and for argon 39.88. The elements in the order of their atomic weights fell into periods, as shown by John Newlands some thirty years ago. The atomic weight of argon, however, was almost precisely that of calcium, and it was to find two elements, and beyond experience to find two such elements, with the same atomic weight. It was therefore necessary to seek for some hypothesis which would remove the difficulty. That argon was not wholly composed of monatomic molecules, as, indeed, among a great majority of monatomic, a few diatomic molecules. Although this supposition had not yet been absolutely proved it appeared to be highly improbable. Another supposition was that argon and helium were mixtures of two or more elements with each other. This idea has lately been put to the proof and negatived. There is no argon lighter or heavier than 19.94 times the weight of hydrogen. In conclusion, the lecturer alluded shortly to some of the remarkable properties of these elements, notably their change of refractive index with change in electric intensity, the great refractivity of argon and its extraordinary conductivity for electricity, and lastly, he pointed out that, contrary to all precedent, it diffused more rapidly than any other gas deduced from its density. He predicted that such anomalous properties would lead to radical changes in our views concerning the structure of gaseous matter.

AT THE MANCHESTER TECHNICAL SCHOOL.—About four o'clock on Wednesday morning a fire was found to have broken out at the Manchester Technical School in Princess-street. A policeman gave information at the chief fire station, and a detachment of fire engine arrived under Mr. Savage quickly turned out. It was seen that the fire was confined to an office on the ground floor, and a portion of the building in the laboratory in the basement. The fire was extinguished before much damage could be done. The outbreak was due to a gas flame being placed too near to timber.

## Trade Notes.

**FAILURE IN THE SUGAR TRADE.**—In the beet sugar trade the suspension is announced of the firm of Musmann and Barrett, which was established in 1887. The liabilities are estimated at about £30,000, of which about one-half will fall upon London houses.

**NITRATE STATISTICS.**—The Permanent Nitrate Committee's public statistical circular for June shows:—Total exports to Europe, May, quintals 1,132,000; loading for Europe, 1st June, quintals 1,480,000; imports, Europe, May, 71,050 tons; deliveries, Europe, May, 67,350 tons; visible supply, Europe, 1st June, stocks and afloat, 372,120 tons.

**STEEL BARRELS FOR TRANSPORTING VITRIOL.**—Messrs. The Iron and Steel Plant Co., Ltd., advise us that they have just completed an order for over two hundred and fifty steel barrels for the Andrée Polar Expedition. These are to be used for the transportation of the sulphuric acid with which it is intended to manufacture the gas for Captain Andrée's balloon. Having given considerable attention to this idea and made various experiments, they are satisfied that the special steel barrels which they have manufactured will prove eminently suitable for the carriage of sulphuric acid.

**LOSS OF A LIVERPOOL NITRATE SHIP.**—On Saturday last information reached Liverpool of the abandonment of the Liverpool ship *Gitana*, but it is fortunately mentioned that all her crew have been saved. The *Gitana* left Iquique, South America, on the 2nd of March last for Hamburg with a cargo of nitrate, and a telegram received from Durban reported the landing of the crew there by the ship *Edinburghshire*. The *Gitana* seems to have met with very heavy weather, as the cablegram says she was dismasted when abandoned by her crew. All on board were saved, but the date of the abandonment is not stated. The *Gitana* belonged to Messrs. R. W. Leyland and Co., of Liverpool, and was an iron ship of 1,401 tons, having been built as far back as 1861. She was under the command of Captain Roberts.

**EFFECTIVE MILK ADULTERATION FINES.**—Before Mr. J. M. Yates, Q.C., at the Manchester County Police Court, the other day, George Heald, farmer, of Didsbury, was summoned for selling adulterated milk. Inspector Pattinson stated that on the 30th ult. he met the defendant's cart, and asked to be supplied with a pint of new milk. The man replied that he had no new milk, it was the previous day's. The inspector said he must have a pint, and was supplied, and paid the man 1d. for it. A sample was sent to the analyst, who certified that five per cent. of water had been added to every hundred parts of the poorest milk. On behalf of the defendant it was contended that the milk contained a fair amount of fat. Mr. Yates said it was a clear case, and seeing that the defendant had been previously fined £2. and costs, £10. and costs, £5. and costs (for refusing to sell a sample), and £10. and costs, he must again pay £10. and costs.

**COMPENSATION FOR BRINE PUMPING.**—The Local Government Board have just issued an order providing for the formation of a Compensation Board to carry out the provisions of the Brine Pumping Act, which recently received the Royal Assent, and under which salt and alkali makers in the Northwich district are to contribute up to 3d. per thousand gallons of brine pumped for damage occasioned by the subsidence of property. The order sets forth that the Board, which is to be elected in November, is to consist of nine members, of whom three are appointed by the Cheshire County Council, two by the Northwich Urban Council, and one by the Northwich Rural Council, and three elected by the brine pumpers. The chairman of the County Council will act as returning officer at the election, at which brine-pumpers vote for candidates on the basis of one vote for every 10,000,000 gallons of brine pumped in the year preceding. The Board retains office for three years.

**FATALITY AT A CHEMICAL WORKS.**—A man named Joel Hardley, about 30 years of age, died at the Victoria Infirmary, Northwich, on Tuesday morning from the effects of the scalds sustained while trespassing in the chemical works at Bonner's Green, near Northwich, on Sunday night. Hardley was formerly employed at these works, and had been discharged some weeks previously. It appears that he came into the works at 11 p.m., under the influence of drink, and having sat down in the hut provided for the workmen, seems to have gone straight to the sump from which the still liquor is pumped to the overhead tanks. By some means his legs became entangled between the planks covering the sump, which held him there until released by the still-man. A still of neutral liquor was being run off at the time, and there was a lamp placed within twelve inches of where he fell, but his condition did not seem to enable him to recognise it. As the consequence the still liquor, at a temperature of about 180° F., poured over him until the still-man came to his assistance, probably only for a few minutes, but sufficiently long to produce consequences which terminated fatally on Tuesday morning as stated. Joel Hardley was formerly in business as a successful butcher in Northwich.



**ASBESTOS AND MICA IN WESTRALIA.**—The asbestos recently found at Goongarrie has been pronounced to be of good quality, and efforts are to be made to introduce it on the London market. A discovery of mica has been made between Coolgardie and Londonderry. The sheets are said to be of considerable size.

**WORKS STRUCK BY LIGHTNING.**—About a quarter past six on Wednesday evening the chimney of Mr. Ellis Salt's Works, Liversedge, was struck by the electric fluid, a violent storm passing over the district at the time. The masonry at the top and the brickwork for seven or eight yards were destroyed. The damage is estimated at about £100, and the property was not insured.

**IMPROVED RONTGEN TUBES.**—The General Electrical Association announce that they have succeeded in so improving the Röntgen tubes as to render it possible for the internal structure of the head, the larynx, and more especially the action of the respiratory organs and heart to be observed direct on the fluorescent screen. A practical demonstration is to be given at the Surgical Congress in Berlin.

**THE RESIN MARKET.**—In their monthly report on the resin market Messrs. F. and S. Chiesman and Co., of London and Liverpool, say that the first month of the statistical year in resin, as compared with last year, shows a falling off in the receipts of common resin and a slight increase in those of pales. Exports from Savannah and other ports have been very heavy, and stocks are considerably reduced. Business in the London market has been quiet on the spot, with a fairly good trade for "forward" shipment. The market has continued steady in Liverpool, with, however, only a limited demand either on the spot or for shipment. The cheap steamer lots lately brought have kept consumers fairly well supplied.

**BRASSWORKER'S DISEASES.**—A report has been issued this week from the Departmental Committee on the conditions of labour in the manufacture of brass and of kindred amalgamations. The larger share of the attention of the Committee, it appears, was devoted to studying the conditions of work in Birmingham as being the chief seat of the manufacture of brass, but the inquiry was extended to Willenhall, Wolverhampton, Edinburgh, Glasgow, Sheffield, and other places. The Committee during their inquiry met with ample evidence that brassworkers as a class were extensively liable to diseases of the respiratory organs, such as bronchitis, asthma, and even phthisis.

**THE SHIP CANAL AND THE OIL TRADE.**—Oil has become one of the most important of the direct imports from New York. Special storage facilities at the docks are offered by the Canal Company, and it is understood that some of the largest importers are now selling American lubricating oils, imported *via* the canal, at the same prices for delivery ex store Manchester as are current for the same qualities ex store Liverpool. This means a saving to local buyers of nearly ten shillings per ton. A certain amount of petroleum oil in cases has also been imported, but until large petroleum storage tanks into which tank steamers can discharge are erected on the banks of the canal, Manchester will be at a disadvantage in competing for this trade against ports where such provision exists.

**THE TREATMENT OF RHEA FIBRE.**—In the House of Commons, on Thursday, Sir J. Leese asked the Secretary of State for India whether his attention has been called to the recent discovery of Professor Bilderbeck Gomess of an alleged method of treating rhea fibre on an economical and effective basis. And having regard to the great importance of such a discovery in connection with both the agricultural and manufacturing industries of India and the home textile manufactures, if he would cause inquiries to be made with the object of developing the production of this fibre.—In reply, Lord G. Hamilton said: My attention has not been called to the process mentioned in the question, but if it has a commercial value I have no doubt it will receive the attention of those who are specially interested in the subject. As at present advised, I see no ground for any official inquiry.

**SCIENTIFIC GOLD MINING.**—At the annual meeting of the Institute of Mining Engineers held this week the President (Mr. Mitchell) said:—One notable feature of the gold mining of the present day, especially in South Africa, was the establishment of the industry on a scientific basis. The very best engineering and chemical knowledge had been devoted to devising economies in the production and treatment of ores and to the invention of processes whereby the largest possible amount of gold might be extracted from the ore. One invention, that of the cyanide process (M<sup>r</sup> Arthur-Forrest patent), had revolutionised gold mining in South Africa and New Zealand, and was exerting a great influence in the treatment of ores elsewhere. Generally, it might be said that gold mines were much more efficiently managed than formerly, and as a result it was likely that for many years to come the world's output of gold would be very largely in excess of what it had been in the past.

**THE POSITION OF AMMONIA.**—The following recently appeared in the commercial columns of the *Glasgow Herald*:—"The position of ammonia (writes a correspondent), an important lesser Scotch industry, is slowly forcing itself to the front. The sliding-scale introduced into the bye-products contracts of the gas-works bears weightily on the iron producers of the article, who have to contend with large oncost of the recovery plant. With sulphate of ammonia selling at £7. 15s. per ton in bags f.o.b., an enormous shrinkage has taken place; and it must soon become for them a question if the ammonia is worth the cost of recovery in the shape of sulphate. Deducting bags, carriage, dues, weighing, brokers' commission, and the cost of sulphuric acid—which few iron companies manufacture—the net and naked price cannot exceed £5. per ton, not charging oncost or labour or management; so that the iron recoverers are heavily handicapped compared with those manufacturers who get the bye-products ready to hand on sliding-scale, and who generally imprison the ammonia in acids of their own manufacture. It is a well-known fact that none of the famous natural guanos of Ichaboe or Peru or Chili contain their ammoniacal salts in the shape of sulphate. All the finest virgin guanos were found to contain the salts of ammonia in the shape of the subtle and little understood anhydrous carbonate, or the hydrated sesquicarbonate, or the (for ammonia) very insoluble bicarbonate. Iron makers have a unique field for the manufacture of these salts, as they throw into the air thousands of tons annually of the very gases to make those salts in combination with the ammonia gas now captured by them in sulphuric acid which they have to purchase. The market prices ruling for these luxurious salts of ammonia simply put them out of reach of the sugar grower or agriculturist—running, as they do, from £30. to £45. per ton. If they were tackled by the iron kings, these salts could be produced to sell at £10. to £15. per ton, and show more margin to the makers than the sulphate they now produce; while the benefit to agriculture by the application of genuine plant food of a non-metallic or non-mineral nature would be simply incalculable."

## NOTICES.

### LONDON AGENTS

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On usual trade terms.

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### FOREIGN REMITTANCES.

Owing to the inconvenience created by the various ways in which foreign subscriptions are remitted, we respectfully beg to inform subscribers that a *Crossed MONEY ORDER* is the most satisfactory method of remitting, both for them and ourselves. In the case of a Money Order, a letter advising us of same should always be sent, otherwise, owing to post-office formalities, much delay in tracing and acknowledging foreign remittances is inevitably entailed in this country.

## Market Reports.

### TAR AND AMMONIA PRODUCTS.

Benzols are firm, 90's being quoted 2s. 6d. and 50/90's 2s. 2d. For forward, 90's 2s. 4d. to 2s. 5d. There is practically no change in the other tar products, carbolic acids being unaltered from last quotations, while naphthas are also without change. Pitch is firm at 32s. to 32s. 6d., f.o.b. East Coast.

Sulphate of ammonia is rather quiet, there being only a small business doing. Buyers are again chary, but on the other hand there is not much sulphate offering. Prices are:—London outside makes £8. 2s. 6d., Liverpool £8. 2s. 6d., Hull £8. 1s. 3d. to £8., and Leith £8. to £7. 18s. 9d. Nitrate quietly steady.

### LIVERPOOL MINERAL MARKET.

As is customary during the Whitsuntide holidays our mineral market has been practically suspended, and very little business done; works being closed, there have been practically no orders given out. During the last week, however, there has been a resumption of operations, and orders are now coming pretty freely, and prices on the whole are some-



ron-er. Manganese ore: Spot stocks for sale having been some weeks back, prices were strong and had advanced considerably, especially for the high class ore. The season for shipment, has now commenced, though yet on a small scale, for only cargoes, comprising some 7,000 tons, have been shipped, mostly to the continent, a small portion only coming to this market. The ore has been anticipated long before its arrival, so that it is little, if at all, affected, and in consequence of the slow movement of shipments and the probability of short shipments during the year, prices are not likely to recede to any extent. In fact, of the strong demand consequent upon the large orders for war, causing an increased consumption of this mineral, it is not likely that prices will see any reduction. The lower grades of manganese, which are fairly plentiful, are bringing higher prices, but only those of a special nature are wanted at any price. The higher grades of manganese are in request, and bring advanced figures, and are likely to continue to do so. Ground manganese continues unaltered with a good demand, at £6., £8., £10., and £12. 10s. per ton according to grade. Manganiferous iron ore continues scarce, and demand at slightly advanced figures. Chrome ore: Arrivals somewhat increased, and figures are rather easier. Bauxite continues with a good demand, with the probability of a material increase in shipment; prices, however, remain unaltered at 20s. for firsts, 18s. for seconds, and 12s. for thirds, f.o.b. French chalk: The higher grades are exceedingly scarce, in consequence of the past winter having caused a suspension of operations at the mines, and a consequent reduction of output; some of the finer brands are at present scarce, prices, therefore, are firm at 65s. to 70s., 80s. to 90s., and 100s. per ton, according to grade. Wolfram and scheelite continue in strong demand, and there are practically no stocks, except of the lower grades; high qualities of mineral will not be here for some time. Ferro-chromium and ferro-tungsten are in good demand, and are still excited, and higher prices are sought. Fuller's earth continues steady at the last quotations—50s. for lump, 55s. for ground, and 60s. per ton for impalpable powder. Ochres and umbers meet with a steady sale at 60s. for J.C. ochre, and 40s. for umber. Bog ore is in more demand for the higher grades. Bog ore is with further improvement in the demand. Magnesite sells but if the present uneasiness in the East should create further alarm, the consequence may be that exportations will be restricted, and figures will be enhanced when shipments cannot be made. Go continues to sell freely at £6. to £10. per ton for foundry's use, with prime Ceylon at £15. to £20. per ton. Carbonate and sulphate of barytes are quiet, without change to report. Fluorspar is in demand. Feldspar continues quiet.

## LIVERPOOL OIL AND COLOUR MARKET.

WEDNESDAY.

8.—Palm oil is steady; prices remaining unaltered, although it is decidedly indifferent. Sales have been made in both hard oils at about the same prices as ruled last week. There is a good sale being made in olive, in spite of the fact that the market is flagging somewhat; there is no change in values. Linseed oil, but Liverpool makes in export casks are still quoted 19s. 6d. per cwt., according to quality. There is nothing fresh to report in cottonseed, Liverpool refined standing at 16s. 3d. to 17s. and an 16s. 9d. to 17s. per cwt. The tone of the market for castor oil is steady, good seconds Calcutta selling at 2½d., ex quay, and an offer at 2¾d. to 2½d., ex store. Sales of first pressure French oil at 2½d. per lb. Tallow is moving rather better, but there is no notable change in values. Resin continues firm in price, with a little business passing. Spirits of turpentine are scarce, and firm at 6d. per cwt; forward continues to be offered at 20s. 9d. per cwt. American steady, but inclined to be quiet: American 6¼d. to 7½d., Russian refined 5¼d. per gallon.

COLOURS.—Prices are steady, and practically without change. Oxfordshire, common, £10., medium, £12., best, £15. per cwt.; hire, common, 40s.; medium, 50s., best, 60s.; Welsh, best, 60s., and common, 18s.; Irish, Devonshire, 40s. to 45s.; French, J.C., 65s. umber: 40s. to 45s. White lead, £16. and unchanged. Venetian red, £6. to £10. Cobalt: Prussian blue, 9s. 9d.; black, 9s.; blue, 6s. Oxide of iron: Common, £10.; finest, £20. Zinc oxide, £22. 10s. to £25.

## THE METAL MARKETS.

LONDON, WEDNESDAY.—Pig iron, dull: Scotch warrants closed at 11½d.; Middlesbrough, 37s. 6d. cash, and hematite, 47s. 5½d. flat: Chili bars, G.O.B.'s and G.M.B.'s, closed at £47. to £48. 2s. 6d. cash, and £48. 3s. 9d. to £48. 8s. 9d. three

months. Tin, steady: Straits closed at £60 5s. to £60 15s. cash, and £60 15s. to £61 5s. three months; Australian, £61. 12s. 6d.; English ingots, £64. 10s. Lead, firm: Spanish, £11. 2s. 6d.; English, £11. 5s.; Silesian spelter, ordinary, £18. Nickel, 1s. 2d. Antimony, £30. 5s. to £30 10s. Quicksilver: First hands, £6 15s.; second hands, £6. 12s. 6d. Copper shares, firm: Cape, 2½ to 2¾; Copiapo, 2¼ to 2½; Libiola, 2½ to 3½; Mason and Barry, 3 to 3¼; Rio Tinto, 22½ to 23; Tharsis, 5½ to 5¾.

GLASGOW, WEDNESDAY.—Market better, with moderate business. Scotch done at 46s. 10½d., 47s., 46s. 10d., and 46s. 11½d. cash, also at 47s., 46s. 11d., and 47s. one month; closing with buyers at 46s. 11½d. cash, sellers ask 47s. Cleveland closes with buyers at 37s. 6d. cash, sellers ask 37s. 7d. Cumberland hematite done at 47s. 6d. cash, also at 47s. 8d., 47s. 7½d., and 47s. 8d. one month; closing with buyers at 47s. 5½d. cash, sellers ask 47s. 6½d. Middlesbrough hematite closes with buyers at 44s. 10d. cash, sellers ask 45s.

## REPORT ON MANURE MATERIAL.

The market has been quiet throughout the week, though a fair amount of retail business is passing. The quotations are—for 75/80% Florida phosphate rock 6d. per unit, for South Carolina 5¼d., and for similar grade Algerian 5¼d. per unit, in cargoes, less 2½%, c.f. & i. to good United Kingdom ports, 1896 steamer shipment. There is nothing fresh to report in River Plate bones. The position of East Indian bone meal is improved, there being no longer sellers at prices recently current. For May-June shipment £3. 12s. 6d. per ton is now lowest, and for autumn shipment £3. 15s. to £3. 17s. 6d. per ton required. For crushed Kurrachee bones £3. 17s. 6d. is the quotation for shipment. Nitrate of soda is quiet on spot, but fairly steady at 7s. 10½d. per cwt ordinary, and 8s. per cwt. for refined quality. In the forward position the market is quiet.

## MISCELLANEOUS CHEMICAL MARKET.

In the alkali trade there is nothing in the general situation to report in the way of change. Prices all round remain steady at figures which have been ruling for some time past. Ammonia alkali, under the arrangement of makers, undergoes no fluctuation, and stands at £3. 7s. 6d., bags, makers' works, and £3. 15s., casks, f.o.b. Caustic soda is in moderate demand, but no improvement in price is looked for. Current quotations are as follows:—F.o.b. Liverpool, 77%, £9. 7s. 6d. per ton; 74%, £8. 7s. 6d. per ton; 70%, £7. 7s. 6d.; 60%, £6. 7s. 6d. per ton, 10 ton lots and upwards. In Leblanc ash there is only a small business doing at 1d. to 1¼d. per degree, in casks, f.o.b. Bicarbonate steady at £6 12s. 6d., f.o.b. Soda crystals quiet at 35s., bags, f.o.r. In chlorates prices are weak: Potash at 4½d., and soda 6d. per lb. Saltcake firm at 22s. 6d., f.o.r. Recovered sulphur, £3 12s. 6d. per ton. Sulphate of copper, £18. 15s., f.o.b., with brisk demand thereat. Acetates of lime still in excess supply, and brown quoted £4. to £4. 2s. 6d., c.i.f. Acetate of soda steady at £14. 10s. Acetates of lead quiet and unchanged in value. Sulphocyanides rather easier. Yellow prussiate of potash has further declined to 6¼d. For potash, caustic and carbonate, there is still a fairly good inquiry, and prices are firm. White powdered arsenic continues in short supply, and price unchanged at £23. to £23 5s. for spot delivery. Sal ammoniac has been reduced, and now stands at 37s. and 35s. for firsts and seconds respectively.

## WEST OF SCOTLAND CHEMICALS.

GLASGOW, TUESDAY.

Although prices are all nominally upheld, the general market is, on the whole, even weaker than it was. Foreign competition, successfully prosecuted, is alleged by not a few to be the real cause of that lack of spirit in the home production, which has so long been a predominant and unwelcome feature. In special lines this week there is hardly anything that is new. Sulphate of ammonia holds the little it had, but does not do more, £8., spot, Leith, having been generally accepted on the part of sellers at the close of last week, though to-day the feeling after a higher fraction is a little stronger. Forward business at about 10s in advance of spot value was rumoured, but has not been confirmed. No change of any sort in mineral oils or paraffins, all being very idle, except the lubricants.

Chief prices current are:—Soda crystals, £2. 2s. 6d., nett, Tyne; soda ash, 48/56°, £4. to £4. 15s. nett, Tyne; white alkali, 48/52°, £4. 10s. to £5. nett, Tyne; alum in lump, £5. to £5. 5s. nett, Glasgow; caustic soda, white, 74° £8. 7s. 6d., 70/72° £7. 7s. 6d., 60/62° £6. 7s. 6d., and cream 60/62° £6. 7s. 6d., all nett, Liverpool; bleaching



powder, £6. 17s. 6d. nett, Tyne; saltcake, 23s. 6d.; borax, English, refined, £20., and boracic acid, £30. nett, Glasgow; bicarbonate of soda, 5-cwt. casks, £6. 10s., and 1-cwt. casks £6. 15s. nett, Liverpool; bichromate of potash, 4½d. nett, for Scotch and English deliveries (for export, 4¼d. nett, f.o.b. Glasgow); bichromate of soda, 3¼d. nett, for Scotch and English deliveries (for export, 3½d. nett, f.o.b. Glasgow); chlorate of potash, 4½d. less 5%, any port; nitrate of soda, 8s. to 8s. 3d.; sulphate of ammonia, £8. to £8. 1s. 3d., f.o.b., Leith; sal-ammoniac, first and second white, £39. and £37. nett, any port; sulphate of copper, £19. less 5%, Liverpool; paraffin scale, hard, 1½d. to 1¾d., and soft, 1¼d. to 2d. per lb.; paraffin wax, 120° semi-refined, 2½d. to 2¾d. per lb.; paraffin spirit (naphtha), 7d. per gallon; sulphur oil (burning) No. 1, 6¼d., and crystal, 6½d., at Glasgow and other big centres, for Scotch buyers (English sales ½d. to ¾d. lower); ditto (lubricating) 865° £4. 10s. to £5., 885° £5. 10s. to £6., and 890/895° £6. to £6. 10s. Week's imports of sugar at Greenock were 13,400 bags beet, unrefined, and 795 bags beet, refined.

### TYNE CHEMICAL REPORT.

TUESDAY.

In the chemical trade there has been very little doing over the holidays. The demand has only been quiet, and prices generally remain unaltered. Soda crystals, £2. 2s. 6d. per ton, gross weight, locally. Bleaching powder, from £6. 10s. to £7. 5s., according to destination. Sulphur scarce at £3. 17s. 6d. per ton.

Bleaching powder, softs, £7. 5s. per ton, nett; hard, £7. 10s. per ton, nett; caustic soda, 76/77%, £9. 5s. per ton, nett; do., 70%, £7. 15s. per ton, nett; recovered sulphur, 2 cwt. bags, £3. 17s. 6d. per ton, nett; soda ash, 48%, £4. per ton, nett; do., 50%, £4. 3s. 4d. per ton, nett; do., 52%, £4. 6s. 8d. per ton, nett; alkali, 36%, £2. 15s. per ton, nett; white alkali, 48%, £4. 10s. per ton, nett; do., 50%, £4. 15s. per ton, nett; do., 52%, £5. per ton, nett; hyposulphite of soda, 5-7 cwt. casks, £6. 5s. per ton, nett; do., 1 cwt. kegs, £7. per ton, nett; silicate of soda, 75° Tw., £2. 12s. 6d. per ton, nett; do., 100° Tw., £3. per ton, nett; do., 140° Tw., £3. 7s. 6d. per ton, nett; soda crystals, casks, £2. 2s. 6d. per ton, gross weight; do., 2 cwt. bags, £2. 2s. 6d. per ton, nett weight; chlorate of potash, 5d. per lb., less 6%; pearl hardening, £3. per ton, nett; pure white sulphate of alumina, £3. 17s. 6d. per ton, nett; blanc fixe, £7. 5s. per ton, nett; chloride of barium, refined crystals, £6. 15s. per ton, nett; do., 90-95%, crude calcined, £6. per ton, nett; sulphide of barium, crystals, £4. 15s. per ton, nett; carbonate of alumina, £30. per ton, nett; aluminate of soda, £30. per ton, nett.

SALT.—South Durham salt is firm at 9s. per ton, f.o.b. Tees, and business is fairly good.

COALS are perhaps a shade better, and best Northumbrian steam scarcer and in demand at 8s. 3d. to 8s. 6d. per ton; household coals, dull; and gas coals rapidly declining in demand. Prices are as under:—Best Northumbrian steam, 8s. 3d. to 8s. 6d. per ton; second qualities, 7s. 3d. to 7s. 6d. per ton; small steam 3s. 9d. to 4s. per ton; bunker coals, unscreened, 6s. 3d. to 6s. 6d.; gas coals, 6s. 6d. to 6s. 9d. per ton; household coals, 10s. to 10s. 6d. per ton; coke, in good demand, 15s. to 15s. 6d. per ton.

### HULL PAINT, OIL, AND COLOUR REPORT.

TUESDAY.

OILS.—The normal demand with which the holidays interfered can hardly be said to have returned, for the market is far from satisfactory. Linseed oil has declined in value, and refined cotton oil is steady at the decline of last week. The import during the week of linseed has been 5,080 quarters, viz., from Riga, 3,124 quarters; Bombay, 1,637 quarters; Königsberg, 250 quarters; and Catania, 69 quarters. Linseed oil is lower: spot, 17s. 6d., naked; June-August, 17s. 9d.; and September-December, 17s. 10¼d.; boiled and refined, £1. to £2. per ton extra. The export for the week has been 2,520 cwt. The

import of cottonseed during the week has been 2,212 tons, from Alexandria. Refined cotton oil is steady at the decline: spot, 14s. 3d., naked, buyers; and June-August, 14s. 7½d.; November-April quoted 15s. 3d.; casks £1. and ordinary barrels £1. 10s. ton extra. Export of refined oil for the week has been 5,960 cwt. Cas'or oil, 2½d. per lb. for first pressure. Cod oils, £17 to £18. per ton. Herring oil, £14. Turpentine unchanged. Boiled siccative oil, £12. per ton. American cotton oil soap, 70% fatty acids, is quoted 10s. per ton cheaper, £10 10s. per ton, in barrels. Locomotive grease, £10. 10s. per ton. Brown wool grease, £8. per ton.

CAKES.—Linseed cakes lower in price: 95% pure, £5. 10s. Oilcakes, £4. 17s. 6d.; Americans, £5; Russians, £5. 10s. Cotton cakes: Demand quiet, but prices steady; best makes, £3. 17s. 6d. seconds, £3. 12s. 6d. to £3. 15s. Rape cakes unchanged.

PAINTS.—Makers could spare but little time for holidays. There is a good demand for ready-mixed paints in tins, especially those brands of established reputation, prices being about £24. per ton. White and red leads unchanged. Dry mineral colours from £3. 10s. to £4. Various assorted paints in oil from £11. per ton. Good demand for lime blues, from £12. to £16., and ultramarines 3d. to 6d. per lb. Paint remover, £1. 5s. to £1. 10s. per cwt. Imperial black varnish, £5. 10s. per ton, in barrels. Varnish stains, from 8s. per gallon. Oak varnish, from 5s. 6d. per gallon.

### New Companies.

**Electrical Copper Company, Limited.**—CAPITAL £500,000. £1. shares of which 150,000 are preference. This company has been formed to acquire and work certain patents for the electrolytic treatment of copper and other metals. The subscribers to the memorandum of association are:—H. M. Matheson, 3, Lombard-street, E. merchant; C. A. Fould, 85, Avenue Morceau, Paris, député; Dumoulin, 19, Rue Miromesnil, Paris, propriétaire; A. McKee, Ditton-road, Widnes, smelter; R. M. Moir, 1, St. Swithin's-lane, E. merchant; R. Lorimer, 1, St. Swithin's-lane, E.C., merchant; I. Johnson, 197, Dalston-lane, N.E., clerk.

**New Julia Nitrate Company, Limited.**—CAPITAL £250,000. shares of 10s. each. This company is the outcome of the reconstruction of the Julia-Taltal Nitrate Company, Limited, the business of which has been taken over by the new company, which will trade as nitrate, iodine, and chemical manufacturers. The subscribers to the memorandum of association are:—G. Hume, 22, Budge-row, E.C., director of companies; J. T. C. Winkfield, 148½, Fenchurch-street, E. merchant; E. W. Vincent, 31, Broad-street House, E.C., merchant; W. Tremayne, Aldington-road, Streatham, merchant; T. Thackthwaite, Farnham Royal, Bucks, gentleman; F. S. Wells, Palace-road, East Molesey, gentleman; A. M. Jay, 17, Old Broad-street, E.C., stockbroker.

**Reddish Brick, Tile, and Pottery Company, Limited.** CAPITAL £10,000, in shares of £5. each. This company has been formed to carry on the businesses indicated in the title. The subscribers to the memorandum of association are:—T. Meadows, Heaton House, Stockport, contractor; W. Meadows, Heaton Chapel, Stockport, contractor; G. Everatt, Heaton Moor, near Stockport, manufacturer; F. W. Scott, Reddish, near Stockport, manufacturer; R. Hollingdrake, Edgeley House, Stockport, ironfounder; T. Torkington, Needwood, Stockport, manufacturer; T. L. Smith, Buxton-road, Stockport, manufacturer.

### Gazette Notices.

#### PARTNERSHIP DISSOLVED.

W. H. SMITH and T. GREENWOOD, under the style of Smith, Greenwood, and Co. proprietors and publishers of the "Oil and Colourman's Journal," the "Pottery Gazette," the "Hatter's Gazette," the "Decorator's Gazette," and "Plumber's and Gasfitter's Review," Ludgate Hill, E.C.

## IMPORTS OF CHEMICAL PRODUCTS

AT

### THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

#### LONDON.

Week ending May 23rd.

#### Acetate of Lime—

U. States, 12 bbls.

Bourne.

Graham & Co.

#### Acetic Acid—

Holland, 20 pks.

R. W. Greeff & Co.

Little & Johnston

#### Acetone—

Holland, 1 dm.

G. Rahn & Co.

#### Alkali—

Holland, 20 c.

J. Barber & Co.

Montreal, 114

S. Ward & Co.

" 377

J. Barber & Co.

#### Ammonium Anhydrous—

Germany, 10 cs.

H. Lorenz

#### Antimony Ore—

Corsica, 13 t.

J. Bamber

" 13

L. & I. D. Jt.

N. S. W., 8

James & Shaks

#### Asbestos—

France, £25

Mory &

Holland, 10

G. Rahn &

#### Barium Chlorate—

Germany, 23 cks.

Petri







|                                       |                               |
|---------------------------------------|-------------------------------|
| Hamburg, 22 cks.                      |                               |
| Baltimore, 350                        |                               |
| <b>Glue—</b>                          |                               |
| Marseilles, 25 cs.                    |                               |
| New York, 10 brls.                    | D. Moseley & Sons             |
| <b>Iodine—</b>                        |                               |
| Valparaiso, 22 brls.                  |                               |
| <b>Limestone—</b>                     |                               |
| Antwerp, 1 cs. 1 crt.                 | J. T. Fletcher & Co.          |
| " 3                                   |                               |
| <b>Lithopone—</b>                     |                               |
| Antwerp, 1 brl.                       |                               |
| <b>Mica—</b>                          |                               |
| New York, 10 brls.                    | T. Robinson & Son             |
| <b>Molasses—</b>                      |                               |
| Hamburg, 100 cks.                     |                               |
| <b>Ochre—</b>                         |                               |
| Alicante, 40 brls.                    |                               |
| Marseilles, 27                        |                               |
| " 10                                  | Birmingham Colour Co.         |
| <b>Paint—</b>                         |                               |
| Baltimore, 30 cs.                     | J. Nickels & Co.              |
| Marseilles, 16 5 brls.                | Collet                        |
| " 14 10                               |                               |
| <b>Paraffin Scale—</b>                |                               |
| New York, 450 brls.                   | Anglo-Am. Oil Co.             |
| <b>Phosphates—</b>                    |                               |
| Ghent, 260 bgs.                       | J. T. Fletcher & Co.          |
| <b>Pitch—</b>                         |                               |
| Antwerp, 7 cks.                       |                               |
| <b>Potash Salts—</b>                  |                               |
| Hamburg, 102 bgs.                     |                               |
| <b>Pumice Stone—</b>                  |                               |
| Leghorn, 5 cs.                        |                               |
| <b>Pyrites—</b>                       |                               |
| Huelva, 2,676 t.                      | Matheson & Co.                |
| <b>Saltpetre—</b>                     |                               |
| Karachi, 170 bgs.                     |                               |
| Hamburg, 20 kgs.                      |                               |
| <b>So. p.—</b>                        |                               |
| Boston, 5 cs.                         | Evans, Sons & Co.             |
| " 10                                  | J. Thompson                   |
| Leghorn, 120 50 bxs.                  |                               |
| New York, 50                          | T. M. Mullin & Co.            |
| Marseilles, 246 135                   |                               |
| <b>Soapstone—</b>                     |                               |
| Bordeaux, 200 bgs.                    | G. & G. Blackwell, Sons & Co. |
| <b>Starch—</b>                        |                               |
| Boston, 550 bgs. 110 brls.            |                               |
| Bremen, 5 29 cs.                      | J. T. Fletcher & Co.          |
| Antwerp, 152                          |                               |
| " 324                                 |                               |
| Baltimore, 400 sks.                   |                               |
| <b>Stearine—</b>                      |                               |
| Antwerp, 13 bgs.                      |                               |
| <b>Sulphur—</b>                       |                               |
| Catania, 214 brls. 34 cks. 540 bgs.   |                               |
| <b>Tallow—</b>                        |                               |
| New York, 50 hds.                     |                               |
| Zarate, 271 ps. L. Nelson & Sons Ltd. |                               |
| Boston, 40 150 tcs.                   |                               |
| Baltimore, 140                        |                               |
| Philadelphia, 50                      |                               |
| <b>Tartar—</b>                        |                               |
| Bordeaux, 23 cks. 3 bgs.              |                               |
| Naples, 2                             |                               |
| <b>Tartaric Acid—</b>                 |                               |
| Marseilles, 6 brls. 24 cks.           |                               |
| Leghorn, 105                          |                               |
| <b>Treacle—</b>                       |                               |
| Philadelphia, 25 brls.                |                               |
| <b>White Lead—</b>                    |                               |
| Ghent, 10 brls.                       |                               |
| <b>Wood Pulp—</b>                     |                               |
| Christiania, 500 bls.                 | H. Tyrer & Co.                |
| " 1,880                               | A. Wertheim & Co.             |
| Drammen, 1,093                        | H. Tyrer & Co.                |
| Skien, 6,898                          | Becker & Co.                  |
| Boston, 369 bds. 285 rolls.           |                               |
| Montreal, 1,140                       |                               |
| <b>Zinc Oxide—</b>                    |                               |
| New York, 50 brls.                    |                               |
| Antwerp, 100 6 cks.                   |                               |

**MANCHESTER.**

Week ending May 23rd.

|                                          |                      |
|------------------------------------------|----------------------|
| <b>Ammonia Salt—</b>                     |                      |
| Antwerp, 23 brls.                        |                      |
| <b>Antimony—</b>                         |                      |
| Treport, 2 cks.                          |                      |
| <b>Barytes—</b>                          |                      |
| Antwerp, 100 bgs.                        |                      |
| <b>Chemicals (otherwise undescribed)</b> |                      |
| Hamburg, 1 ck.                           |                      |
| <b>Colours—</b>                          |                      |
| Rotterdam, 11 cks. 10 cs. 30 brls.       |                      |
| " 6 bxs.                                 |                      |
| Hamburg, 2 3                             |                      |
| <b>Cream of Tartar—</b>                  |                      |
| Rotterdam, 10 cks.                       |                      |
| <b>Dyestuffs—</b>                        |                      |
| Alizarine                                |                      |
| Rotterdam, 12 cks.                       |                      |
| Shumac                                   |                      |
| Limassol, 500 bgs.                       |                      |
| <b>Farina—</b>                           |                      |
| Stettin, 1,220 bgs.                      | Brown, Geveke, & Co. |
| " 2,070                                  |                      |
| <b>Glucose—</b>                          |                      |
| Hamburg, 50 cks.                         |                      |
| Stettin, 68 20 bgs.                      |                      |
| <b>Glue—</b>                             |                      |
| Rouen, 38 cks.                           |                      |
| Stettin, 40 bgs.                         |                      |
| Antwerp, 6 4 bls.                        |                      |
| Treport, 15 41                           |                      |
| <b>Limestone—</b>                        |                      |
| Antwerp, 4 cs.                           | J. T. Fletcher & Co. |
| " 3 8 crts.                              |                      |
| <b>Ochre—</b>                            |                      |
| Treport, 126 cks.                        |                      |
| <b>Oxalic Acid—</b>                      |                      |
| Rotterdam, 30 cks.                       |                      |
| <b>Paint—</b>                            |                      |
| Antwerp, 1 brl.                          | J. T. Fletcher & Co. |
| <b>Phosphate—</b>                        |                      |
| Antwerp, 4 cks.                          |                      |
| <b>Potash—</b>                           |                      |
| Treport, 22 cks. 21 dms.                 |                      |
| <b>Starch—</b>                           |                      |
| Rotterdam, 270 cs.                       |                      |
| Ghent, 160                               |                      |
| Antwerp, 328                             |                      |
| <b>Varnish—</b>                          |                      |
| Antwerp, 4 brls.                         | J. T. Fletcher & Co. |
| <b>White Lead—</b>                       |                      |
| Antwerp, 6 cks.                          |                      |
| <b>Wood Pulp—</b>                        |                      |
| Hamburg, 741 bds.                        |                      |
| Christiania, 1,800 bls.                  | W. H. Ingram         |
| Drammen, 253 bds.                        | "                    |
| <b>Zinc Ashes—</b>                       |                      |
| Stettin, 8 cks.                          |                      |
| <b>Zinc Oxide—</b>                       |                      |
| Antwerp, 25 brls.                        |                      |

**HULL.**

Week ending May 23rd.

|                                          |                           |
|------------------------------------------|---------------------------|
| <b>Acetic Acid—</b>                      |                           |
| Rotterdam, 10 blns.                      | Hutchinson & Son          |
| <b>Albumen—</b>                          |                           |
| Riga, 7 pks.                             |                           |
| St. Petersburg, 42 cs.                   | Wilson, Sons, & Co., Ltd. |
| <b>Aniline—</b>                          |                           |
| Amsterdam, 7 cs.                         | W. & C. L. Ringrose       |
| <b>Barytes—</b>                          |                           |
| Antwerp, 46 cks.                         | Bailey & Leatham          |
| " 3                                      | Reckitt & Sons            |
| Bremen, 19                               |                           |
| Riga, 96                                 | Wilson, Sons, & Co., Ltd. |
| <b>Chemicals (otherwise undescribed)</b> |                           |
| Stettin, 8 cks.                          | Wilson, Sons, & Co., Ltd. |
| New York, 6 brls.                        |                           |
| Dunkirk, 148 cks.                        | "                         |
| Hamburg, 7                               | "                         |
| <b>Colours—</b>                          |                           |
| Rotterdam, 29 cks.                       | Hutchinson & Son          |
| " 41 bxs. 13 cs. 71 brls.                |                           |

|                                         |                           |
|-----------------------------------------|---------------------------|
| Antwerp, 1                              | Bailey & Leatham          |
| Rotterdam, 10 cks.                      | Wilson, Sons & Co., Ltd.  |
| Danzig, 10                              | "                         |
| Dunkirk, 10 brls.                       | "                         |
| Antwerp, 24 pks.                        | "                         |
| Hamburg, 1 ck.                          | "                         |
| Rotterdam, 20 3 cs. W. & C. L. Ringrose |                           |
| " 72 brls. 4 bxs.                       |                           |
| <b>Dextrine—</b>                        |                           |
| Stettin, 100 cks. 20 bgs.               | Wilson, Sons, & Co., Ltd. |
| <b>Dyestuffs—</b>                       |                           |
| Alizarine                               |                           |
| Rotterdam, 181 brls.                    | Hutchinson & Son          |
| " 28 1 cs. W. & C. L. Ringrose          |                           |
| " 30 cks.                               |                           |
| Amsterdam, 7 pks.                       | "                         |
| Valonia                                 |                           |
| Marathonisi, 87 t.                      |                           |
| <b>Farina—</b>                          |                           |
| Stettin, 139 bgs.                       | Wilson, Sons, & Co., Ltd. |
| " 98                                    |                           |
| Ghent, 252 cs.                          | "                         |
| Harlingen, 200 bgs.                     | "                         |
| Antwerp, 25                             | "                         |
| <b>Glucose—</b>                         |                           |
| New York, 1,000 bgs. 250 brls.          | Wilson, Sons, & Co., Ltd. |
| " 500 bgs. 350 brls.                    |                           |
| <b>Glue—</b>                            |                           |
| Stettin, 1 ck.                          | Wilson, Sons, & Co., Ltd. |
| Rouen, 9 19 bls. Rawson & Robinson      |                           |
| Dunkirk, 44                             | Wilson, Sons, & Co., Ltd. |
| <b>Manganese Oxide—</b>                 |                           |
| Amsterdam, 10 cks.                      | Blundell, Spence, & Co.   |
| <b>Oxalic Acid—</b>                     |                           |
| Rotterdam, 6 cks.                       | Hutchinson & Son          |
| <b>Phosphate—</b>                       |                           |
| Ghent, 230 t.                           |                           |
| <b>Pitch—</b>                           |                           |
| Hamburg, 30 brls.                       | Wilson, Sons, & Co., Ltd. |
| Rotterdam, 42 cks.                      | W. & C. L. Ringrose       |
| <b>Potash—</b>                          |                           |
| Antwerp, 16 pks.                        | Wilson, Sons, & Co., Ltd. |
| <b>Rosin—</b>                           |                           |
| New York, 1 brl.                        |                           |
| <b>Soap—</b>                            |                           |
| New York, 100 cs.                       | Wilson, Sons, & Co., Ltd. |
| <b>Starch—</b>                          |                           |
| New York, 250 bgs.                      | Wilson, Sons, & Co., Ltd. |
| Antwerp, 218 cs. Bailey & Leatham       |                           |
| Bremen, 1,995                           | Veltmann & Co.            |
| <b>Stearine—</b>                        |                           |
| Antwerp, 54 pks.                        | Wilson, Sons, & Co., Ltd. |
| <b>Tallow—</b>                          |                           |
| St. Petersburg, 30 cks.                 |                           |
| <b>Tartaric Acid—</b>                   |                           |
| Rotterdam, 8 cks.                       | Hutchinson & Son          |
| <b>Treacle—</b>                         |                           |
| New York, 680 brls.                     | Wilson, Sons, & Co., Ltd. |
| <b>Turpentine—</b>                      |                           |
| Libau, 52 cks.                          |                           |
| <b>Ultramarine—</b>                     |                           |
| Bremen, 2 cks.                          |                           |
| Rotterdam, 22                           | Hutchinson & Son          |
| <b>Varnish—</b>                         |                           |
| New York, 12 brls.                      | Wilson, Sons, & Co., Ltd. |
| " 1                                     | G. R. Sanderson & Co.     |
| <b>White Lead—</b>                      |                           |
| Amsterdam, 62 cks.                      | Hutchinson & Son          |
| Antwerp, 34                             | Bailey & Leatham          |
| Rotterdam, 15                           | Hutchinson & Son          |
| <b>Wood Pulp—</b>                       |                           |
| Helsingfors, 24 bls.                    | J. Good & Sons            |
| " 10                                    |                           |
| <b>Zinc Oxide—</b>                      |                           |
| Antwerp, 50 cks.                        | Bailey & Leatham          |
| <b>Zinc White—</b>                      |                           |
| Rotterdam, 1 ck.                        | Hutchinson & Son          |

**GLASGOW.**

Week ending May 28th.

|                                          |                           |
|------------------------------------------|---------------------------|
| <b>Acetate of Lime—</b>                  |                           |
| New York, 1,953 bgs.                     |                           |
| <b>Acetone—</b>                          |                           |
| Hamburg, 10 cks. 10 dms.                 |                           |
| <b>Albumen—</b>                          |                           |
| Antwerp, 10 cs.                          |                           |
| <b>Alizarine Colours—</b>                |                           |
| Antwerp, 5 cks.                          |                           |
| <b>Ammonium Acetate—</b>                 |                           |
| Rotterdam, 2 brls.                       | J. Rankine & Son          |
| <b>Aniline—</b>                          |                           |
| Hamburg, 5 cs. 10 cks.                   |                           |
| <b>Aniline Dyes</b>                      |                           |
| Antwerp, 35 cks. 4 cs.                   |                           |
| <b>Barium Sulphate—</b>                  |                           |
| Antwerp, 100 bgs.                        |                           |
| <b>Barytes—</b>                          |                           |
| Rotterdam, 86 cks.                       | J. Rankine & Son          |
| " 92 pks.                                |                           |
| <b>Castor Oil—</b>                       |                           |
| Antwerp, 29 cks.                         |                           |
| <b>Chemicals (otherwise undescribed)</b> |                           |
| Rotterdam, 1 cs. 2 cks.                  | Rankine & Son             |
| Hamburg, 9                               |                           |
| New York, 20                             |                           |
| <b>Chrome Ore—</b>                       |                           |
| Macri, 2,250 t.                          | Stevens, Carlile & Co.    |
| <b>Cod Oil—</b>                          |                           |
| Montreal, 30 brls.                       |                           |
| <b>Colours—</b>                          |                           |
| Rotterdam, 2 bxs. 1 brl.                 | Rankine & Son             |
| Antwerp, 3 cks. 7 cs.                    |                           |
| Rotterdam, 36 pks.                       |                           |
| <b>Cottonseed Oil—</b>                   |                           |
| New York, 25 brls.                       |                           |
| <b>Cream of Tartar—</b>                  |                           |
| Barcelona, 2 cks.                        |                           |
| Tarragona, 7                             |                           |
| <b>Dyestuffs—</b>                        |                           |
| Alizarine                                |                           |
| Rotterdam, 21 cks.                       | J. Rankine & Son          |
| " 10 pks.                                |                           |
| <b>Gutch</b>                             |                           |
| Rangoon, 2,241 bxs.                      |                           |
| <b>Extracts</b>                          |                           |
| Philadelphia, 50 brls.                   |                           |
| New York, 2 bxs.                         |                           |
| <b>Logwood</b>                           |                           |
| Port Maria, 523 t. 7½ c.                 | Muckley & Co.             |
| <b>Farina—</b>                           |                           |
| Delfayl, 650 bgs.                        |                           |
| <b>French Chalk—</b>                     |                           |
| Fiume, 50 bgs.                           | Robertson, M'Intosh & Co. |
| " 150                                    |                           |
| <b>Gelatine—</b>                         |                           |
| Rouen, 20 cs.                            |                           |
| <b>Glucose—</b>                          |                           |
| Philadelphia, 900 brls.                  |                           |
| New York, 1,000                          |                           |
| <b>Glue—</b>                             |                           |
| Fiume, 30 brls.                          |                           |
| Rouen, 28 cks. 17 bls. 49 cs.            |                           |
| Hamburg, 2 bskts.                        |                           |
| <b>Iron Oxide—</b>                       |                           |
| Trieste, 28 cks.                         | Ferguson & Co.            |
| <b>Lead Acetate—</b>                     |                           |
| Hamburg, 20 cks.                         |                           |
| <b>Naphthylamine—</b>                    |                           |
| Antwerp, 3 cks.                          |                           |
| <b>Ochre—</b>                            |                           |
| Rouen, 61 cks.                           |                           |
| <b>Paraffin Wax—</b>                     |                           |
| Rangoon, 82 bxs.                         |                           |
| <b>Potassium Chlorate—</b>               |                           |
| Rouen, 16 cks.                           |                           |
| <b>Rosin—</b>                            |                           |
| New York, 2,424 brls.                    |                           |
| <b>Soap—</b>                             |                           |
| Fiume, 130 cs.                           |                           |
| Philadelphia, 25 crts.                   |                           |



| LONDON.                         |     |  | LONDON.                                  |            |     |
|---------------------------------|-----|--|------------------------------------------|------------|-----|
| Week ending May 27th.           |     |  |                                          |            |     |
| Cose de Guatemala, 2 cks. 4 cs. | £15 |  | Savanilla, 2                             | 8          |     |
| an, 8 c.                        | 12  |  | B. Ayres, 2                              | 31         |     |
| Louis, 6                        | 26  |  | <b>Caustic Potash—</b>                   |            |     |
| —                               |     |  | Adelaide, 1 t. 19 c.                     | £37        |     |
| London, 10 c.                   | £33 |  | <b>Caustic Soda—</b>                     |            |     |
| —                               |     |  | Mauritius, 2 t. 8 c.                     | £29        |     |
| —                               |     |  | Melbourne, 13 16                         | 185        |     |
| —                               |     |  | Natal, 5 18                              | 145        |     |
| —                               |     |  | Wellington, 11 6                         | 6          |     |
| —                               |     |  | Sydney, 7 12                             | 87         |     |
| —                               |     |  | <b>Chemicals (otherwise undescribed)</b> |            |     |
| —                               |     |  | San Jose de Guatemala, 4 pkgs.           | £13        |     |
| —                               |     |  | Madras, 1 cs.                            | 12         |     |
| —                               |     |  | Cape Town, 1 ck.                         | 33         |     |
| —                               |     |  | Durban, 3 pks.                           | 17         |     |
| —                               |     |  | Melbourne, 40 brls. 3                    | 40 kgs. 50 |     |
| —                               |     |  | Dunkirk, 20                              | 200        |     |
| —                               |     |  | Malaga, 2                                | 13         |     |
| —                               |     |  | Hamburg, 15                              | 200        |     |
| —                               |     |  | <b>Citric Acid—</b>                      |            |     |
| —                               |     |  | Liban, 2 t. 10 c.                        | £315       |     |
| —                               |     |  | Rockhampton, 2                           | 12         |     |
| —                               |     |  | Hamburg, 2                               | 10 kgs. 62 |     |
| —                               |     |  | Sydney, 2                                | 13         |     |
| —                               |     |  | Christiania, 1                           | 8          |     |
| —                               |     |  | Calcutta, 1 cs. 3                        | 27         |     |
| —                               |     |  | Rotterdam, 2                             | 5          | 32  |
| —                               |     |  | Cape Town, 2                             | 3          | 4   |
| —                               |     |  | Natal, 1                                 | 4          | 7   |
| —                               |     |  | Maryboro', 1                             | 7          | 6   |
| —                               |     |  | St. Petersburg, 1                        | 1          |     |
| —                               |     |  | <b>Coal Products—</b>                    |            |     |
| —                               |     |  | <b>Alizarine</b>                         |            |     |
| —                               |     |  | Barcelona, 4 cks. 2 bxs.                 | £114       |     |
| —                               |     |  | Yokohama, 18 kgs.                        | 70         |     |
| —                               |     |  | Melbourne, 6 cs.                         | 47         |     |
| —                               |     |  | <b>Aniline Dyes</b>                      |            |     |
| —                               |     |  | Calcutta, 4 cs.                          | £78        |     |
| —                               |     |  | <b>Aniline Oil</b>                       |            |     |
| —                               |     |  | Ghent, 3 cks.                            | £40        |     |
| —                               |     |  | <b>Aniline Salts</b>                     |            |     |
| —                               |     |  | Dunkirk, 10 cks.                         | £75        |     |
| —                               |     |  | <b>Anthracene</b>                        |            |     |
| —                               |     |  | Dusseldorf, 198 cks.                     | £900       |     |
| —                               |     |  | <b>Benzol</b>                            |            |     |
| —                               |     |  | Hamburg, 24 runlets                      | £100       |     |
| —                               |     |  | Stockholm, 2 dms.                        | 40         |     |
| —                               |     |  | Rotterdam, 20 cks.                       | 236        |     |
| —                               |     |  | <b>Creosote</b>                          |            |     |
| —                               |     |  | Baltimore, 2 cs.                         | £14        |     |
| —                               |     |  | <b>Creosote Salts</b>                    |            |     |
| —                               |     |  | Philadelphia, 1,342 bgs                  | £720       |     |
| —                               |     |  | <b>Naphtha</b>                           |            |     |
| —                               |     |  | Treport, 28 cks.                         | £64        |     |
| —                               |     |  | <b>Naphthaline</b>                       |            |     |
| —                               |     |  | Hamburg, 10 cks. 103 bgs.                | £78        |     |
| —                               |     |  | New York, 263                            | 296        |     |
| —                               |     |  | <b>Pitch</b>                             |            |     |
| —                               |     |  | Boston, 401 cks.                         | £229       |     |
| —                               |     |  | Baltimore, 224                           | 123        |     |
| —                               |     |  | Hochfeld, 585 t.                         | 1,114      |     |
| —                               |     |  | Antwerp, 550                             | 990        |     |
| —                               |     |  | Newport, 445 bgs. 110                    | 42         |     |
| —                               |     |  | New York, 450 3,382                      | 895        |     |
| —                               |     |  | St. John, 248                            | 170        |     |
| —                               |     |  | Newport News, 500                        | 100        |     |
| —                               |     |  | <b>Tar</b>                               |            |     |
| —                               |     |  | Aden, 15 runlets                         | £10        |     |
| —                               |     |  | New York, 25 cks.                        | 37         |     |
| —                               |     |  | Natal, 176 dms.                          | 13         |     |
| —                               |     |  | <b>Coal Products (otherwise undes.)</b>  |            |     |
| —                               |     |  | Melbourne, 20 brls.                      | £21        |     |
| —                               |     |  | <b>Copper Sulphate—</b>                  |            |     |
| —                               |     |  | Bordeaux, 78 t. 5 c.                     | £1,499     |     |
| —                               |     |  | Paris, 141                               | 2,735      |     |
| —                               |     |  | Treport, 20                              | 3'8        |     |
| —                               |     |  | Lisbon, 50                               | 804        |     |
| —                               |     |  | <b>Copperas—</b>                         |            |     |
| —                               |     |  | Natal, 1 kg.                             | £1         |     |
| —                               |     |  | <b>Cream of Tartar—</b>                  |            |     |
| —                               |     |  | Wellington, 10 c.                        | £56        |     |
| —                               |     |  | Malta, 1                                 | 6          |     |
| —                               |     |  | Fremantle, 3                             | 16         |     |
| —                               |     |  | Natal, 3                                 | 17         |     |
| —                               |     |  | Charters Towers, 2                       | 10         |     |
| —                               |     |  | Brisbane, 7                              | 34         |     |
| —                               |     |  | Rockhampton, 5 t. 5                      | 519        |     |
| —                               |     |  | <b>Disinfectants—</b>                    |            |     |
| —                               |     |  | Napier, 15 dms.                          | £11        |     |
| —                               |     |  | Algoa Bay, 14                            | 14 pks. 21 |     |
| —                               |     |  | Hamburg, 3                               | 16         |     |
| —                               |     |  | Antigua, 10                              | 2 cks. 24  |     |
| —                               |     |  | Brisbane, 1 cs.                          | 3          |     |
| —                               |     |  | Cape Town, 2 t. 2 c.                     | 36         | 60  |
| —                               |     |  | Sydney, 25                               | 4          | 60  |
| —                               |     |  | Paris, 10                                | 26         | 60  |
| —                               |     |  | Christchurch, 39 cs.                     | 72         |     |
| —                               |     |  | <b>Manure—</b>                           |            |     |
| —                               |     |  | Trinidad, 200 t.                         | £1,800     |     |
| —                               |     |  | Durban, 25                               | 66         |     |
| —                               |     |  | Teneriffe, 7                             | 10 c. 19   |     |
| —                               |     |  | Morlaix, 84                              | 386        |     |
| —                               |     |  | Martinique, 27                           | 18 23 1/2  |     |
| —                               |     |  | Malaga, 29                               | 3          | 210 |
| —                               |     |  | Jersey, 9                                | 70         |     |
| —                               |     |  | <b>Mirbane Oil—</b>                      |            |     |
| —                               |     |  | Algoa Bay, 1 c.                          | £5         |     |
| —                               |     |  | <b>Oxalic Acid—</b>                      |            |     |
| —                               |     |  | Calcutta, 10 c.                          | £18        |     |
| —                               |     |  | <b>Phosphorus—</b>                       |            |     |
| —                               |     |  | Alexandria, 12 c.                        | £102       |     |
| —                               |     |  | <b>Potassium Bichromate—</b>             |            |     |
| —                               |     |  | Salonica, 11 c.                          | £24        |     |
| —                               |     |  | Riga, 8                                  | 19         |     |
| —                               |     |  | <b>Potassium Carbonate—</b>              |            |     |
| —                               |     |  | Algoa Bay, 3 c.                          | £4         |     |
| —                               |     |  | Potassium Chlorate—                      |            |     |
| —                               |     |  | Cape Town, 2 t.                          | £24        |     |
| —                               |     |  | New York, 1                              | 42         |     |
| —                               |     |  | Mazatlan, 10 c.                          | 21         |     |
| —                               |     |  | <b>Potassium Cyanide—</b>                |            |     |
| —                               |     |  | Adelaide, 3 t. 8 c.                      | £374       |     |
| —                               |     |  | Algoa Bay, 10                            | 1,027      |     |
| —                               |     |  | Shanghai, 5                              | 9 50       |     |
| —                               |     |  | Fremantle, 5                             | 8 500      |     |
| —                               |     |  | Melbourne, 40 cs.                        | 321        |     |
| —                               |     |  | Madras, 7                                | 10 571     |     |
| —                               |     |  | New York, 50 cks.                        | 523        |     |
| —                               |     |  | Delagoa Bay, 25 6                        | 2,424      |     |
| —                               |     |  | <b>Potassium Frusiate—</b>               |            |     |
| —                               |     |  | Philadelphia, 10 t. 4 c.                 | £545       |     |
| —                               |     |  | <b>Salts of Lime and Soda—</b>           |            |     |
| —                               |     |  | New York, 2 cs. 10 cks.                  | £127       |     |
| —                               |     |  | <b>Saltpetre—</b>                        |            |     |
| —                               |     |  | Melbourne, 5 t.                          | £121       |     |
| —                               |     |  | Auckland, 5                              | 10 c. 11   |     |
| —                               |     |  | Montreal, 5                              | 10 10      |     |
| —                               |     |  | Maryboro', 2                             | 2 3        |     |
| —                               |     |  | Natal, 1                                 | 2 24       |     |
| —                               |     |  | Rockhampton, 2                           | 45         |     |
| —                               |     |  | Madeira, 1                               | 10 14      |     |
| —                               |     |  | Sydney, 1                                | 23 23      |     |
| —                               |     |  | Flushing, 15                             | 33         |     |
| —                               |     |  | Bahia, 2                                 | 9 58       |     |
| —                               |     |  | <b>Sheep Dip—</b>                        |            |     |
| —                               |     |  | Sydney, 100 cks. 1,450 dms               | £1,097     |     |
| —                               |     |  | Calcutta, 20                             | 25         |     |
| —                               |     |  | Durban 500 cs. 16 t. 11 c.               | 1,312      |     |
| —                               |     |  | Cape Town, 50                            | 11         |     |
| —                               |     |  | Punta Arenas, 15 cks.                    | 98         |     |
| —                               |     |  | Natal, 750                               | 169        |     |
| —                               |     |  | Rockhampton, 135 cs.                     | 62         |     |
| —                               |     |  | E. London, 500                           | 1,000      |     |
| —                               |     |  | <b>Soda Ash—</b>                         |            |     |
| —                               |     |  | Oporto, 1 t. 6 c.                        | £5         |     |
| —                               |     |  | <b>Soda Crystals—</b>                    |            |     |
| —                               |     |  | Sydney, 2 t. 8 c.                        | £6         |     |
| —                               |     |  | Cape Town, 2                             | 13 7       |     |
| —                               |     |  | <b>Sodium Bicarbonate—</b>               |            |     |
| —                               |     |  | Wanganui, 1 t.                           | £7         |     |
| —                               |     |  | Natal, 16 c.                             | 9          |     |
| —                               |     |  | Salonica, 5                              | 55         |     |
| —                               |     |  | Albany, 1                                | 8          |     |
| —                               |     |  | Nelson, 1                                | 8          |     |
| —                               |     |  | Rockhampton, 1                           | 6          |     |
| —                               |     |  | <b>Sodium Hyposulphite—</b>              |            |     |
| —                               |     |  | Natal, 1 t.                              | £8         |     |
| —                               |     |  | <b>Sodium Nitrate—</b>                   |            |     |
| —                               |     |  | Teneriffe, 2 t. 10 c.                    | £21        |     |
| —                               |     |  | <b>Sodium Sulphate—</b>                  |            |     |
| —                               |     |  | Ghent, 172 t.                            | £23        |     |



**Sodium Tartrate—**

Mazatlan, 10 c. £42

**Strontium Carbonate—**

New York, 10 c. £21

**Strontium Nitrate—**

New York, 13 c. £15

**Sulphur—**

Punta Arenas, 29 brls. £42

Cape Town, 21 t. 14 c. 50 kgs. 294

**Sulphuric Acid—**

Beira, 20 cs. £10

Madeira, 2 t. 1 c. 15

**Tartaric Acid—**

Wellington, 1 c. £8

Auckland, 7 33

Natal, 2 14

Malta, 2 15

Melbourne, 5 31

Rockhampton, 5 34

Brisbane, 15 94

Calcutta, 8 57

E. London, 3 pks. 15

**Zinc Oxide—**

Baltimore, 4 c. £22

**LIVERPOOL.**

Week ending May 27th.

**Acetic Acid—**

Lisbon, 1 t. 17 c. £12

**Acids—**

Rangoon, 2 c. £8

**Albumen—**

Boston, 6 c. £40

New York, 2 t. 2 10

**Alum—**

Montreal, 5 t. 1 c. 1 q. £26

Malaga, 1 11 3 8

Constantinople, 4 19 3 15

Rabat, 3 6 1 16

Galatz, 13 8 3 63

**Ammonia—**

New York, 3 c. 1 q. £9

**Ammonium Carbonate—**

Amsterdam, 8 c. £11

Copenhagen, 15 25

New York, 1 t. 15 3 q. 59

Bordeaux, 2 5 2 79

Venice, 10 18

Marseilles, 1 9 3 46

Ibrail, 10 18

Genoa, 2 70

**Ammonium Chloride—**

Varna, 12 c. £22

Trieste, 2 t. 12 c. 72

Ibri, 1 4 45

Ancona, 1 10 18

Beyrout, 8 brls. 43

Nantes, 25 4 2 q. 300

Kurrachee, 1 10 56

Paris, 15 3 27

Malta, 4 2 8

New York, 2 5

Carril, 4 3 9

Galatz, 4 8

Smyma, 1 7 2 53

**Ammonium Sulphate—**

Hamburg, 4 t. 18 c. £50

Leghorn, 10 120

Pekelongan, 64 760

Sourabaya, 122 19 1,100

Samarang, 217 8 1 q. 1,811

Honolulu, 25 15 3 210

Valencia, 194 6 1 2,124

Palermo, 20 11 1 210

Las Palmas, 27 1 228

New York, 101 1 1 1,189

**Antimony Salt—**

Oporto, 5 c. 1 q. £30

**Arsenic—**

San Francisco, 4 t. 4 c. £00

Venice, 2 2 2 q. 45

**Bleaching Powder—**

Barcelona, 92 cks. £23

Boston, 283 75

Montreal, 60 30

New York, 30

**Boric Acid—**

Toronto, 9 c. £12

Montreal, 1 t. 11 3 q. 51

Hamburg, 15 24

**Borax—**

Sydney, 1 t. 10 c. £28

Shanghai, 1 3 3 q. 24

Cadiz, 1 2 20

Toronto, 12 4 2 245

Antwerp, 8 16 181

Ibrail, 1 2 20

Montreal, 3 16 3 66

Genoa, 1 20

E. London, 7 cks. —

Cape Town, 2 10 brls. —

Johannesburg, 12 4 2 q. 228

Hamburg, 17 5 3 6

Halifax, 17 7 2 347

Rotterdam, 10 t. 1 c. £20

New York, 8 c. £14

Cadiz, 1 t. 2 3 q. 22

Hong Kong, 16 1,080

Dunkirk, 1 5 166

New York, 3 17 70

Hamburg, 1 5 63

Rio de Janeiro, 1 t. £15

Sydney, 4 19 c. 63

Carbon Bisulphide—

Caustic Soda—

Barcelona, 98 pks. 60 bxs.

Bibao, 75 54

H. Ayres, 8 54

Colombo, 50 54

Hamburg, 192 54

Melbourne, 358 54

Odessa, 320 29 cks.

Philadelphia, 18 60 bxs.

Pt. Elizabeth, 300 54

Rangoon, 350 54

Rio Grande Do Sul, 80 54

St. Petersburg, 300 54

San Sebastian, 30 54

Santos, 80 54

Chemicals (otherwise undescribed)

New York, 19 t. 18 c. £717

Calcutta, 40 5 3 q. 110

Alexandria, 10 7

San Francisco, 2 15 90

Lisbon, 1 18 3 25

Kurrachee, 2 cs. 31

Old Calabar, 2 cs. 15

China Clay—

Boston, 330 cks.

New York, 210

Philadelphia, 530

St. Nazaire, 10 bgs.

Chromium Trioxide—

Hamburg, 1 t. £64

Citric Acid—

Tampico, 1 c. £6

Sydney, 5 33

Carril, 2 13

Coal Products—

Aniline Salts

St. Nazaire, 10 cks.

Pitch

Antwerp, 51 t. 7 c. £150

Tar

Honolulu, 50 brls.

Copper Sulphate—

Malta, 2 t. 9 c. £43

Lisbon, 9 170

St. John's, Nfld., 3 19 53

Odessa, 5 2 76

Porto Alegre, 5 5 5

Trieste, 3 19 2 q. 91

Rouen, 10 180

Boston, 81 9 2 389

Melbourne, 5 90

Leghorn, 34 2 1 5,680

Naples, 16 4 2 1,672

Ancona, 16 13 3 274

Halifax, 12 3 1 197

Oporto, 59 12 983

New York, 5 5 2 6

Venice, 83 19 2 1,386

Nantes, 111 2 2 1,687

Bordeaux, 373 15 3 5,211

Cette, 102 16 2 1,706

Bayonne, 19 15 270

Paris, 4 16 86

Seville, 4 19 166

Barcelona, 9 19

Copperas—

M. Video, 4 t. £6

Rabat, 1 3 c. 2

Cream of Tartar—

Vera Cruz, 3 c. £19

Disinfectants—

Montreal, 1 t. 4 c. £8

Bombay, 1 t. 20

Valparaiso, 50 bxs. 20

Farina—

Montreal, 3 cks.

Gelatine—

Honolulu, 1 cs.

Gypsum—

New York, 36 t. 5 c. £116

**Indigo Waste—**

Montreal, 11 c. 3 q. £24

**Iron Oxide—**

Philadelphia, 11 t. 5 c. £290

Naples, 5 8 33

Bombay, 2 8 30

**Lime—**

Lagos, 7 t. 15 c. £18

**Manure—**

Teneriffe, 2 t. £10

Madeira, 44 14 c. 260

**Oxalic Acid—**

Vera Cruz, 2 c. £4

Boston, 21 t. 10 622

San Francisco, 104 7 170

**Paint—**

Bombay, 128 kgs.

Bordeaux, 246

Callao, 41

Chama, 33 4 dms.

Curacao, 6 cks. 1 cs.

Lisbon, 1 cs.

Mayaguez, 1

M. Video, 2

Pernambuco, 2 1

Porto Rico, 14

San Juan, 65 kgs. 1 ck.

**Painters' Colours—**

B. Ayres, 41 cks. 42 kgs. 36 cs.

Calcutta, 47

Cape Town, 40

Cartagena, N.G., 20 6 brls. 2

Hamburg, 27 tcs. 50 kgs. 20 120 dms.

Havana, 3 cks. 25 kgs.

Havre, 2 brls. 3

Hong Kong, 12 pks.

Honolulu, 31 3 60

Lisbon, 16 60

Manilla, 10 29 50

M. Video, 3 200 30 cs.

Odessa, 20

Rosario, 70

St. Petersburg, 20

**Paraffin Wax—**

Rio de Janeiro, 6 cs.

**Phosphoric Acid—**

Antofagasta, 1 t. 4 c. 1 q. £11

**Phosphorus—**

Hiogo, 5 cs. £63

**Potash—**

Rangoon, 2 c. £6

**Potash Salts—**

Genoa, 1 t. 12 c. £100

**Potassium Bichromate—**

Seville, 7 c. 3 q. £18

**Potassium Chlorate—**

Passages, 1 t. 3 50

Corunna, 6 t. £241

Hiogo, 2 10 c. 98

Boston, 6 5 235

New York, 12 10 475

Naples, 10 20

Odessa, 2 84

Genoa, 1 39

Santos, 3 117

Shanghai, 1 15 70

**Potassium Prussiate—**

Naples, 11 c. £36

Genoa, 11 3 q. 43

**Salt—**

Ambriz, 11 t. 15 c.

Ambrizette, 14 3

Antwerp, 205

Baltimore, 176 cks.

Boma, 20

Boston, 200

B. Ayres, 50

Calcutta, 7,163

Cameroons, 14 15

Cape Coast, 10

Ghent, 150

Lagos, 100

Loango, 8

Montreal, 96

New York, 50

Para, 391

Portland, 615

Rangoon, 1,015

Rotterdam, 100

Sapeli, 6

Shediac, 120

Sierra Leone, 100

Souris, 217

Sydney, 157

Trinidad, 36

Valencia, 150

Victoria, B. C., 15

Salt Cake—

Genoa, 10 t. 9 c. £20

Saltpetre—

Manaos, 9 c. 3 q. £13

Teneriffe, 4 t. 16

Pernambuco, 1 12

Para, 2 10

Parnahyba, 2 10

Slag—

St. John's, N. Id., 99 t.

**Soap—**

Alexandria, 2 cs.



**N.CHESTER.**

Week ending May 27th.

|                                   |         |         |
|-----------------------------------|---------|---------|
| <b>Sodium Carbonate—</b>          |         |         |
| lam,                              | 4 cks.  | 10 kgs. |
| g—                                |         |         |
| nia,                              | 1 ck.   |         |
| <b>As (otherwise undescribed)</b> |         |         |
|                                   | 13 cks. |         |
| p,                                | 10 cks. |         |
| na,                               | 20      |         |
|                                   | 396 t.  | 11 c.   |
| 3—                                |         |         |
| me,                               | 5 cs.   |         |

**HULL.**

Week ending May 23rd.

|                                    |            |              |
|------------------------------------|------------|--------------|
| <b>Sodium Sulphate—</b>            |            |              |
|                                    | 882 bgs.   |              |
| ncisco,                            | 1,393 sks. |              |
| <b>Sulphate—</b>                   |            |              |
| ene—                               |            |              |
| am,                                | 55 cks     |              |
| <b>Sulphuric Acid—</b>             |            |              |
| am,                                | 24 cks.    |              |
| <b>Soda—</b>                       |            |              |
|                                    | 4 cks.     | 25 dms.      |
|                                    | 3          |              |
| <b>Als (otherwise undescribed)</b> |            |              |
| p,                                 | 1 ck.      | 50 pks.      |
|                                    | 2          | 4 cs.        |
| nia,                               | 9          |              |
| 312 sils.                          | 22         | 5            |
| ugen,                              | 2          |              |
| im,                                | 345        |              |
| urg,                               | 40         | 34 11        |
| g,                                 | 25         | 10 6         |
| am,                                | 72         |              |
| rsburg,                            | 18         |              |
| g,                                 | 1          |              |
|                                    | 30         |              |
| <b>Sed Oil—</b>                    |            |              |
| lam                                | 1,700 c.   |              |
|                                    | 1,056      |              |
| nia,                               | 125        |              |
| ugen,                              | 42         |              |
| im,                                | 99         |              |
|                                    | 41         |              |
|                                    | 190        |              |
| urg,                               | 17         |              |
| g,                                 | 683        |              |
| erg,                               | 100        |              |
| im,                                | 1,463      |              |
|                                    | 512        |              |
| —                                  |            |              |
|                                    | 30 b. ls.  |              |
| <b>Is (otherwise undescribed)</b>  |            |              |
| im,                                | 6 cks.     | 5 cs.        |
|                                    | 64 bgs.    |              |
|                                    | 4 cks.     |              |
|                                    | 4          |              |
| <b>Oil—</b>                        |            |              |
|                                    | 17 c.      |              |
|                                    | 18         |              |
|                                    | 27         |              |
|                                    | 73         |              |
| ia,                                | 920        |              |
| sand,                              | 35         |              |
| sund,                              | 43         |              |
| gen,                               | 35         |              |
| m,                                 | 295        |              |
| f,                                 | 562        |              |
| ucn,                               | 69         |              |
| r,                                 | 173        |              |
| —                                  |            |              |
|                                    | 454 bgs.   |              |
|                                    | 250 t.     |              |
| <b>White—</b>                      |            |              |
| im,                                | 39 cks.    |              |
| —                                  |            |              |
| gen,                               | 2 dms.     |              |
| <b>Colours—</b>                    |            |              |
| im,                                | 4 cks.     |              |
| 10 pks.                            | 36         | 4 cs. 8 dms. |
|                                    | 200        |              |
|                                    | 4          | 13           |
| ia,                                | 1          |              |
| sand,                              | 1          | 4            |
| 80 pks.                            |            | 40 kgs.      |
| gen,                               | 2          |              |
| n,                                 | 4          |              |
| 4 pks.                             | 2          |              |

|                 |         |           |
|-----------------|---------|-----------|
| Gothenburg,     | 19      | 2         |
| Hamburg,        | 5       |           |
| Konigsberg,     | 40      |           |
| Pernambuco,     | 16      | 1 51 pks. |
| Rotterdam,      | 66      |           |
| Riga,           | 57      | 1         |
| Stettin,        | 4       |           |
| Stockholm,      | 74 t.   |           |
| Antwerp,        | 88      | 30 c.     |
| Christiana,     |         |           |
| Dunkirk,        |         |           |
| <b>Soap—</b>    |         |           |
| Copenhagen,     | 1 cs.   |           |
| Drontheim,      | 1       |           |
| Ghent,          | 4       |           |
| <b>Starch—</b>  |         |           |
| Gothenburg,     | 25 bgs. |           |
| <b>Tallow—</b>  |         |           |
| Gothenburg,     | 6 cks.  |           |
| Wasa,           | 189     |           |
| Abo,            | 19      |           |
| <b>Tar—</b>     |         |           |
| Antwerp,        | 12 cks. |           |
| Bremen,         | 4       |           |
| Christiana,     | 10      |           |
| Copenhagen,     | 6       |           |
| Drontheim,      | 5       |           |
| Gothenburg,     | 8       |           |
| Hamburg,        | 6       |           |
| Rotterdam,      | 180     |           |
| Wasa,           |         |           |
| <b>Treacle—</b> |         |           |
| Drontheim,      | 25 cks. |           |
| <b>Yarnish—</b> |         |           |
| Antwerp,        | 3 cs.   |           |
| Ghent,          | 1       |           |
| Gothenburg,     | 3       |           |
| Hamburg,        | 1       |           |
| Norrkoping,     | 2 cks.  |           |

**GLASGOW.**

Week ending May 28th.

|                                         |        |       |
|-----------------------------------------|--------|-------|
| <b>Albumen—</b>                         |        |       |
| U.S.A.,                                 | £76    |       |
| <b>Alkali—</b>                          |        |       |
| U.S.A.,                                 | 21 t.  | 17 c. |
| <b>Ammonium Chloride—</b>               |        |       |
| Spain,                                  | £125   |       |
| <b>Benzine—</b>                         |        |       |
| France,                                 | £43    |       |
| <b>Bleaching Powder—</b>                |        |       |
| Calcutta,                               | 25 t.  | 1 c.  |
| <b>Boric Acid—</b>                      |        |       |
| Rotterdam,                              | £10    |       |
| <b>Borax—</b>                           |        |       |
| Melbourne,                              | £42    |       |
| <b>Coal Products—</b>                   |        |       |
| Creosote                                | £903   |       |
| France,                                 | 230    |       |
| New York,                               | £25    |       |
| <b>Creosote Oil</b>                     |        |       |
| Christiana,                             | 516    |       |
| Russia,                                 |        |       |
| <b>Naphtha</b>                          |        |       |
| Dieppe,                                 | 42 t.  |       |
| Pitch                                   |        |       |
| New York,                               | £60    |       |
| Nova Scotia,                            | 60     |       |
| Dieppe,                                 | 1,020  |       |
| U.S.A.,                                 | 65     |       |
| Christiana,                             | 20     |       |
| Canada,                                 | 90     |       |
| Montreal                                | 40     |       |
| Russia,                                 | 80     |       |
| Rocheport,                              | 740    |       |
| <b>Tar</b>                              |        |       |
| Calcutta,                               | £260   |       |
| Russia,                                 | 701    |       |
| <b>Tar Acids</b>                        |        |       |
| U.S.A.,                                 | £45    |       |
| <b>Coal Products—(otherwise undes.)</b> |        |       |
| Rotterdam,                              | £445   |       |
| <b>Cream of Tartar—</b>                 |        |       |
| Algoa Bay,                              | £20    |       |
| <b>Dextrine—</b>                        |        |       |
| Melbourne,                              | £10    |       |
| <b>Dried Blood—</b>                     |        |       |
| Ghent,                                  | 10 t.  | 2½ c. |
| <b>Dyestuffs (otherwise undes.)—</b>    |        |       |
| Calcutta,                               | £68    |       |
| <b>Extracts—</b>                        |        |       |
| Victoria,                               | £250   |       |
| Canada,                                 | 353    |       |
| <b>Fustic Extract—</b>                  |        |       |
| Victoria,                               | £19    |       |
| Canada,                                 | 69     |       |
| <b>Gelatine—</b>                        |        |       |
| U.S.A.,                                 | £1,303 |       |

|                              |        |       |
|------------------------------|--------|-------|
| Canada,                      | 73     |       |
| <b>Lead Acetate—</b>         |        |       |
| Calcutta,                    | £85    |       |
| <b>Linseed Oil—</b>          |        |       |
| Brisbane,                    | 2 t.   | 1½ c. |
| Canada,                      | 15     | 7½    |
| Calcutta,                    | 1      | 18    |
| <b>Logwood—</b>              |        |       |
| Queensland,                  | £77    |       |
| Canada,                      | 73     |       |
| <b>Paint—</b>                |        |       |
| Colombo,                     | £36    |       |
| Newfoundland,                | 20     |       |
| Bergen,                      | 16 c.  |       |
| Adelaide,                    | 53     |       |
| <b>Painters' Colours—</b>    |        |       |
| Hong Kong,                   | £22    |       |
| Montego Bay, Ja.             | 25     |       |
| Melbourne,                   | 43     |       |
| Sydney,                      | 33     |       |
| Rotterdam,                   | 410    |       |
| Algoa Bay,                   | 266    |       |
| Calcutta,                    | 118    |       |
| Cape Town,                   | 40     |       |
| Durban,                      | 50     |       |
| Montreal,                    | 121    |       |
| <b>Paraffin Wax—</b>         |        |       |
| Cape Town,                   | £116   |       |
| Russia,                      | 28     |       |
| Madras,                      | 85     |       |
| <b>Potassium Bichromate—</b> |        |       |
| Spain,                       | £13    |       |
| Bombay,                      | 405    |       |
| Queensland,                  | 20     |       |
| Victoria,                    | 20     |       |
| Christiana,                  | 16     |       |
| Rotterdam,                   | 394    |       |
| Rouen,                       | 257    |       |
| <b>Potassium Prussiate—</b>  |        |       |
| Lyons,                       | 5 t.   | 3½ c. |
| Montreal,                    | 1      | 2½    |
| <b>Rosin Oil—</b>            |        |       |
| Amsterdam                    | £22    |       |
| Philadelphia,                | 22     |       |
| <b>Salt—</b>                 |        |       |
| Nicolaevsk,                  | 200 t. |       |
| <b>Soap—</b>                 |        |       |
| Newfoundland,                | 2 t.   | 10 c. |
| St. John's Nfld.,            | 1      | 17½   |
| E. London,                   | 2      | 5     |
| <b>Sodium Bichromate—</b>    |        |       |
| Rouen,                       | 24 t.  | 4½ c. |
| <b>Tallow—</b>               |        |       |
| Paris,                       | 3 t.   | 8 c.  |
| <b>Treacle—</b>              |        |       |
| Christiana,                  | 27 t.  | 11 c. |
| Rotterdam,                   | 1      | 10    |
| Gothenburg,                  | 6      | 12    |
| Bergen,                      | 2      | 12½   |
| <b>Ultramarine—</b>          |        |       |
| U.S.A.,                      | £20    |       |
| <b>Yarnish—</b>              |        |       |
| Melbourne,                   | £48    |       |
| <b>Verdigris—</b>            |        |       |
| Victoria,                    | £21    |       |

**TYNE.**

Week ending May 23rd.

|                            |       |       |
|----------------------------|-------|-------|
| <b>Alkali—</b>             |       |       |
| Amsterdam,                 | 58 t. | 11 c. |
| Gothenburg,                | 9     | 3     |
| Antwerp,                   | 1     | 13    |
| <b>Ammonium Carbonate—</b> |       |       |
| St. Petersburg,            | 7 t.  | 5 c.  |
| <b>Anthracene—</b>         |       |       |
| Rotterdam,                 | 37 t. | 1 c.  |
| <b>Antimony—</b>           |       |       |
| Rotterdam,                 | 2 t.  |       |
| Hamburg,                   | 1     |       |
| <b>Asbestos—</b>           |       |       |
| Ergasteria,                | 3 c.  |       |
| <b>Barium Carbonate—</b>   |       |       |
| Libau,                     | 3 t.  |       |
| St. Petersburg,            | 5     |       |
| <b>Bleaching Powder—</b>   |       |       |
| Amsterdam,                 | 73 t. | 19 c. |
| Gothenburg,                | 35    | 15    |
| Oporto,                    | 22    | 3     |
| Libon,                     | 9     | 19    |
| Harlingen,                 | 15    | 1     |
| Rotterdam,                 | 28    | 19    |
| Trondhjem,                 | 9     | 19    |
| Christiana,                | 1     | 12    |
| Bergen,                    | 5     | 5     |
| Helsingfors,               | 67    | 2     |
| Hamburg,                   | 43    | 10    |
| Antwerp,                   | 35    |       |
| <b>Carbolic Acid—</b>      |       |       |
| Rotterdam,                 | 5 t.  | 16 c. |

|                             |       |       |
|-----------------------------|-------|-------|
| <b>Caustic Soda—</b>        |       |       |
| Amsterdam,                  | 11 t. | 17 c. |
| Bilbao,                     | 9     | 10    |
| Gothenburg,                 | 2     | 18    |
| Copenhagen,                 | 8     | 10    |
| Harlingen,                  | 4     | 19    |
| Christiana,                 | 3     | 7     |
| Helsingfors,                | 2     | 7     |
| Bjorneborg,                 | 1     | 8     |
| Antwerp,                    | 20    | 3     |
| <b>Glue—</b>                |       |       |
| Gothenburg,                 | 10 c. |       |
| Bergen,                     | 6     |       |
| <b>Lamp Black—</b>          |       |       |
| Antwerp,                    | 11 c. |       |
| <b>Litharge—</b>            |       |       |
| Oporto,                     | 1 t.  | 1 c.  |
| Libon,                      | 3     | 1     |
| Copenhagen,                 | 2     | 8     |
| St. Petersburg,             | 25    | 2     |
| Antwerp,                    | 5     |       |
| <b>Paint—</b>               |       |       |
| Hamburg,                    | 2 t.  | 10 c. |
| Antwerp,                    | 1     |       |
| <b>Potassium Prussiate—</b> |       |       |
| Oporto,                     | 1 c.  |       |
| <b>Soda—</b>                |       |       |
| Amsterdam,                  | 77 t. | 7 c.  |
| Oporto,                     | 5     | 14    |
| Libon,                      | 5     | 5     |
| Rotterdam,                  | 42    | 17    |
| Uleaborg,                   | 3     | 4     |
| Christiansund,              | 7     | 16    |
| Sundsvall,                  | 30    | 5     |
| Christiana,                 | 10    | 5     |
| Arendal,                    | 5     | 3     |
| Helsingfors,                | 12    |       |
| Bjorneborg,                 | 1     | 9     |
| Antwerp,                    | 10    | 10    |
| <b>Soda Ash—</b>            |       |       |
| Gothenburg,                 | 15 t. | 2 c.  |
| Libon,                      | 20    | 6     |
| <b>Sodium Hyposulphite—</b> |       |       |
| Bilbao                      | 2 t.  | 2 c.  |
| <b>Sodium Sulphate—</b>     |       |       |
| Libon,                      | 5 t.  | 13 c. |
| Antwerp,                    | 59    | 18    |
| <b>Sulphur—</b>             |       |       |
| Amsterdam,                  | 2 t.  |       |
| Drammen,                    | 200   |       |
| Gothenburg                  | 53    |       |
| Sannesund,                  | 300   |       |
| <b>Yarnish—</b>             |       |       |
| Christiansund,              | 3 t.  | 15 c. |
| <b>White Lead—</b>          |       |       |
| Oporto,                     | 7 t.  | 15 c. |
| Libon,                      | 3     | 4     |
| Copenhagen,                 | 3     | 6     |

**GOOLE.**

Week ending May 20th.

|                                          |          |       |
|------------------------------------------|----------|-------|
| <b>Benzol—</b>                           |          |       |
| Boulogne,                                | 97 cks.  |       |
| Rotterdam,                               | 74       |       |
| <b>Chemicals (otherwise undescribed)</b> |          |       |
| Amsterdam,                               | 20 cks.  |       |
| Rouen,                                   | 6        |       |
| <b>Coal Products (otherwise undes.)—</b> |          |       |
| Antwerp,                                 | 82 cks.  |       |
| Boulogne,                                | 52       | 6 cs. |
| Ghent,                                   | 1        |       |
| Hamburg,                                 | 1        |       |
| Rotterdam,                               | 262      | 6     |
| <b>Dyestuffs (otherwise undescribed)</b> |          |       |
| Amsterdam,                               | 1 ck.    |       |
| Dunkirk,                                 | 5        | 1 cs. |
| Ghent,                                   | 4        | 67    |
| Hamburg,                                 | 30       |       |
| <b>Logwood—</b>                          |          |       |
| Antwerp,                                 | 847 pcs. |       |
| Hamburg,                                 | 5 t.     |       |
| <b>Manure—</b>                           |          |       |
| Ghent,                                   | 132 bgs. |       |
| <b>Pitch—</b>                            |          |       |
| Antwerp,                                 | 165 t.   |       |
| Dunkirk,                                 | 220      |       |
| <b>GRIMSBY.</b>                          |          |       |
| <b>Week ending May 23rd.</b>             |          |       |
| <b>Alkali—</b>                           |          |       |
| Port au Prince,                          | 256 dms. |       |
| <b>Caoutchouc—</b>                       |          |       |
| Helsenborg,                              | 1 pke.   |       |
| <b>Chemicals (otherwise undescribed)</b> |          |       |
| Gothenburg,                              | 1 ck.    |       |
| Hamburg,                                 | 41 dms.  |       |
| Malmo,                                   | 16       |       |
| <b>Coal Products (otherwise undes.)—</b> |          |       |
| Dieppe,                                  | 185 cks. | 1 cs. |
| Hamburg,                                 | 2        |       |



PRICES CURRENT.

WEDNESDAY, JUNE 3RD, 1896

PREPARED BY MESSRS. HIGGINBOTTOM AND CO., 116, PORTLAND STREET, MANCHESTER.

*The values stated are F.O.R. at maker's works, or at usual ports of shipment in U.K. The price in different localities may vary.*

**Acids :—**

| Acids :—                                   |                   | L. S. G. |         |
|--------------------------------------------|-------------------|----------|---------|
| Acetic, 25 % and 40 % .. .. .              | per cwt.          | 6/       | 8/9-    |
| Glacial .. .. .                            | "                 | 10/-     |         |
| Arsenic S.G., 2000° .. .. .                | "                 | 1        | 2 0     |
| Fluoric .. .. .                            | per lb.           | 0 0      | 3 3/4   |
| Muriatic (Tower Salts), 30° Tw. .. .. .    | per bottle        | 0 0      | 10      |
| (Cylinder), 30° Tw. .. .. .                | "                 | 0 3      | 0       |
| Nitric 80° Tw. .. .. .                     | per lb.           | 0 0      | 1 5/8   |
| Nitrous .. .. .                            | "                 | 0 0      | 1 3/4   |
| Oxalic .. .. .                             | nett              | 0 0      | 3 3/4   |
| Phosphoric, 1750° .. .. .                  | "                 | 0 1      | 0       |
| Picric .. .. .                             | "                 | 0 0      | 11      |
| Sulphuric (fuming 50 %) .. .. .            | per ton           | 15       | 10 0    |
| " (monohydrate) .. .. .                    | "                 | 5        | 10 0    |
| " (Pyrites, 168°) .. .. .                  | "                 | 3        | 0 0     |
| " " 150° .. .. .                           | "                 | 1        | 5 0     |
| " (free from arsenic, 145°) .. .. .        | "                 | 1        | 7 6     |
| Sulphurous (solution) S.G. 1025 .. .. .    | "                 | 3        | 0 0     |
| Tannic (pure) .. .. .                      | per lb.           | 0 1      | 2 1/2   |
| Tartaric .. .. .                           | "                 | 0 1      | 3       |
| Arsenic, white powdered .. .. .            | nett per ton      | 23       | 0 0     |
| Alum (loose lump) .. .. .                  | "                 | 4        | 10 0    |
| Alumina Sulphate (pure) .. .. .            | "                 | 4        | 12 6    |
| Aluminoferri .. .. .                       | "                 | 2        | 5 0     |
| Aluminium .. .. .                          | per lb.           | 0 2      | 10      |
| Ammonia, Anhydrous .. .. .                 | "                 | 0 1      | 4       |
| " 880° = 28° B. .. .. .                    | per lb.           | 0 0      | 2 3/4   |
| " = 24° B. .. .. .                         | "                 | 0 0      | 1 3/4   |
| " Carbonate .. .. .                        | nett              | 0 0      | 3       |
| " Muriate .. .. .                          | per ton           | 22       | 0 0     |
| " (sal-ammoniac) 1st & 2nd .. .. .         | per cwt.          | 37/-     | & 35/-  |
| " Nitrate .. .. .                          | per ton           | 37       | 10 0    |
| " Phosphate .. .. .                        | per lb.           | 0 0      | 6 1/2   |
| " Sulphate (grey) London .. .. .           | per ton           | 8        | 2 6     |
| " (grey) Hull .. .. .                      | "                 | 8        | 1 3     |
| Aniline Oil (pure) .. .. .                 | per lb.           | 0 0      | 7 1/4   |
| Aniline Salt .. .. .                       | "                 | 0 0      | 6 3/4   |
| Antimony .. .. .                           | per ton           | 30       | 0 0     |
| " (tartar emetic) .. .. .                  | per lb.           | 0 0      | 9 1/2   |
| " (golden sulphide) .. .. .                | "                 | 0 0      | 10      |
| Barium Chloride .. .. .                    | per ton           | 7        | 0 0     |
| " Carbonate (native) .. .. .               | "                 | 3        | 10 0    |
| " Sulphate (native levigated) .. .. .      | "                 | 42/6     | to 65/- |
| Bleaching Powder, 35 % .. .. .             | nett              | 6        | 17 6    |
| " Liquor, 7 % .. .. .                      | "                 | 3        | 10 0    |
| Bisulphide of Carbon .. .. .               | "                 | 12       | 10 0    |
| Chromium Acetate (crystal) .. .. .         | per lb.           | 0 0      | 6       |
| Calcium Chloride .. .. .                   | per ton           | 2        | 2 6     |
| China Clay (at Runcorn) in bulk .. .. .    | "                 | 15/-     | to 30/- |
| <b>Coal Tar Products and Dyes :—</b>       |                   |          |         |
| Alizarine (artificial) 20 % .. .. .        | nett per lb.      | 0 0      | 7       |
| Magenta .. .. .                            | "                 | 0 3      | 9       |
| Anthracene, 30 % A, f.o.b. London .. .. .  | per unit per cwt. | 0 0      | 11 1/2  |
| Benzol, 90 % .. .. .                       | per gallon        | 0 2      | 4 1/2   |
| " 50/90 .. .. .                            | "                 | 0 2      | 1       |
| Carbolic Acid (crystallised 40°) .. .. .   | per lb.           | 0 0      | 7       |
| " (crude 60°) .. .. .                      | per gallon        | 0 2      | 1       |
| Creosote (ordinary) .. .. .                | "                 | 0 0      | 1       |
| " (filtered for Lucigen light) .. .. .     | "                 | 0 0      | 1 3/4   |
| Crude Naphtha 30 % @ 120° C. .. .. .       | "                 | 0 0      | 8       |
| Grease Oils, 22° Tw. .. .. .               | per ton           | 2        | 10 0    |
| Pitch, f.o.b. Liverpool or Garston .. .. . | "                 | 1        | 12 6    |
| Solvent Naphtha, 90 % at 160° .. .. .      | per gallon        | 0 1      | 3       |
| " Lucigen " and " Wells " Oils .. .. .     | "                 | 0 0      | 2       |
| Copper .. .. .                             | per ton           | 47       | 13 9    |
| " Sulphate .. .. .                         | "                 | 18       | 15 0    |
| " Oxide (copper scales) .. .. .            | "                 | 42       | 10 0    |
| Glycerine (crude) .. .. .                  | "                 | 36       | 0 0     |
| " (distilled S.G. 1250°) .. .. .           | "                 | 75       | 0 0     |
| Iodine .. .. .                             | nett, per oz.     | 0 0      | 9       |
| Iron Sulphate (copperas) .. .. .           | per ton           | 1        | 7 6     |
| " Sulphide (antimony slag) .. .. .         | "                 | 2        | 0 0     |
| Lead (sheet) for cash .. .. .              | "                 | 12       | 5 0     |
| " Litharge Flake (ex ship) .. .. .         | "                 | 14       | 10 0    |
| " Acetate (white " ) .. .. .               | "                 | 21       | 10 0    |
| " brown " ) .. .. .                        | "                 | 15       | 0 0     |
| " Carbonat: (white lead) pure .. .. .      | "                 | 16       | 0 0     |
| " Nitrate .. .. .                          | "                 | 19       | 0 0     |

|                                                            |               |            |
|------------------------------------------------------------|---------------|------------|
| Lime, Acetate (brown (ex ship) .. .. .                     | per ton       | 4 5 0      |
| " (grey, (ex ship) .. .. .                                 | "             | 7 7 6      |
| Magnesium (ribbon and white) .. .. .                       | per oz.       | 0 2 3      |
| " Chloride (ex ship) .. .. .                               | per ton       | 2 7 6      |
| " Carbonate .. .. .                                        | per cwt.      | 1 19 6     |
| " Calcined Magnesia .. .. .                                | per ton.      | 9 15 6     |
| " Sulphate (Epsom Salts) .. .. .                           | per ton       | 2 15 6     |
| Manganese, Sulphate .. .. .                                | "             | 16 10 0    |
| " Borate .. .. .                                           | per cwt.      | 2 15 0     |
| " Ore, 70 % .. .. .                                        | per ton       | 3 15 0     |
| Methylated Spirit, 61° O.P. .. .. .                        | per gallon    | 0 1 8      |
| Naphtha (Wood), Solvent .. .. .                            | "             | 0 3 0      |
| " Miscible, 60° O.P. .. .. .                               | "             | 0 3 1      |
| <b>Oils:—</b>                                              |               |            |
| Cotton-seed .. .. .                                        | per ton       | 17 0 0     |
| Linseed .. .. .                                            | "             | 20 0 0     |
| Petroleum, American .. .. .                                | per gallon    | 0 0 6 1/2  |
| Stearine .. .. .                                           | per ton       | 21 15 0    |
| Phosphorus (yellow) .. .. .                                | per lb.       | 0 2 2      |
| " (red) .. .. .                                            | "             | 0 2 8      |
| Potassium (metal) .. .. .                                  | per oz.       | 0 3 7      |
| " Bichromate .. .. .                                       | net           | 0 0 4 1/2  |
| " Carbonate, 90% (ex ship) .. .. .                         | per ton       | 16 15 0    |
| " Chlorate .. .. .                                         | per lb.       | 0 0 4 1/2  |
| " Cyanide, 98% .. .. .                                     | "             | 0 1 2      |
| " Hydrate (Caustic Potash) 90% .. .. .                     | per ton       | 74 10 0    |
| " " (Caustic Potash) 75/80% .. .. .                        | "             | 20 10 0    |
| " " (Caustic Potash) 70/75% .. .. .                        | "             | 19 10 0    |
| " Nitrate (refined) .. .. .                                | per cwt.      | 1 1 6      |
| " Permanganate .. .. .                                     | per cwt.      | 3 7 6      |
| " Prussiate Yellow .. .. .                                 | per lb.       | 0 0 8 1/2  |
| " Sulphate, 90 % (ex ship) .. .. .                         | per ton       | 9 15 0     |
| " Muriate, 80 % (do.) .. .. .                              | "             | 8 10 0     |
| Silver (metal) .. .. .                                     | per oz.       | 0 2 7 1/2  |
| " Nitrate .. .. .                                          | "             | 0 2 0      |
| Sodium (metal) .. .. .                                     | per lb.       | 0 2 1 1/2  |
| " Carb. (refined Soda-ash) 48 % .. .. .                    | net           | 4 15 0     |
| " " (Caustic Soda-ash) 48 % .. .. .                        | "             | 4 5 0      |
| " " (Carb. Soda-ash) 48% .. .. .                           | "             | 4 0 0      |
| " " (Alkali) 58 % .. .. .                                  | "             | 3 15 0     |
| " " (Soda Crystals) .. .. .                                | "             | 2 0 0      |
| " Acetate (ex-ship) .. .. .                                | "             | 14 7 6     |
| " Arseniate, 45 % .. .. .                                  | "             | 15 0 0     |
| " Chlorate .. .. .                                         | per lb.       | 0 0 6      |
| " Borate (Borax) .. .. .                                   | net, per ton. | 20 0 0     |
| " Bichromate .. .. .                                       | per lb.       | 0 0 3 1/2  |
| " Hydrate (77 % Caustic Soda) (f.o.b.) net pr. ton .. .. . | lots          | 9 7 6      |
| " " (74 % Caustic Soda) .. .. .                            | "             | 8 7 6      |
| " " (70 % Caustic Soda) .. .. .                            | "             | 7 7 6      |
| " " (60 % Caustic Soda) .. .. .                            | "             | 6 7 6      |
| " " (60 % Caustic Soda, cream) (f.o.b.) .. .. .            | "             | 6 7 6      |
| " Bicarbonate .. .. .                                      | "             | 6 10 0     |
| " Hyposulphite .. .. .                                     | "             | 5 10 0     |
| " Manganate, 25% .. .. .                                   | "             | 15 0 0     |
| " Nitrate (95 %) ex-ship Liverpool .. .. .                 | per cwt.      | 0 7 10 1/2 |
| " Nitrite, 98 % .. .. .                                    | per ton       | 30 0 0     |
| " Phosphate .. .. .                                        | "             | 12 15 0    |
| " Silicate (glass) .. .. .                                 | per ton       | 4 10 0     |
| " " (liquid, 100° Tw.) .. .. .                             | "             | 3 10 0     |
| " Stannate, 40 % .. .. .                                   | per cwt.      | 3 2 9      |
| " Sulphate (Salt-cake) .. .. .                             | per ton.      | 1 3 6      |
| " " (Glauber's Salts) .. .. .                              | "             | 1 10 0     |
| " Sulphide .. .. .                                         | "             | 6 15 0     |
| " Sulphite .. .. .                                         | "             | 5 15 0     |
| Strontium Hydrate, 100% .. .. .                            | "             | 8 0 0      |
| Sulphocyanide Ammonium, 95 % .. .. .                       | per lb.       | 0 0 6 1/2  |
| " Barium, 95 % .. .. .                                     | "             | 0 0 4 1/2  |
| " Potassium .. .. .                                        | "             | 0 0 7      |
| Sulphur (flowers) .. .. .                                  | per ton.      | 6 5 0      |
| " (Roll Brimstone) .. .. .                                 | "             | 3 10 0     |
| " Brimstone: Best Quality .. .. .                          | "             | 3 12 6     |
| Superphosphate of Lime (26%) .. .. .                       | "             | 2 17 6     |
| Tallow .. .. .                                             | "             | 19 10 0    |
| Tin Crystals .. .. .                                       | per lb.       | 0 0 3 1/2  |
| " English Ingots .. .. .                                   | per ton       | 64 10 0    |
| Zinc (Spelter) .. .. .                                     | "             | 18 0 0     |
| " Chloride (solution, 100° Tw.) .. .. .                    | "             | 5 2 6      |



# THE HEMICAL TRADE JOURNAL

AND  
OIL, PAINT and COLOUR REVIEW.

Publishing Offices: 32, BLACKFRIARS STREET, MANCHESTER.

473.

SATURDAY, JUNE 13, 1896.

Vol. XVIII.

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## ADVERTISEMENT.

### SALE BY AUCTION.

LD VITRIOL & CHEMICAL MANUFACTURING WORKS,  
MILNSBRIDGE, HUDDERSFIELD.

D, pursuant to a Judgment of the High Court of Justice made in an  
lison on behalf, etc., v. Dawson and Others, with the approbation of  
ice Kekewich, by Mr. Thomas Albert Taylor (Eddison, Taylor, and  
he person appointed by the said Judge, at the Queen Hotel, Hudders-  
the County of York, on Tuesday, the 23rd June, 1896, at 4.30 o'clock  
ternoon, in one lot.

hose Leasehold Vitriol and Chemical Manu-  
g Works, situate at Milnsbridge, near Huddersfield, in the occupation  
on Bros., Limited.

are situate on the banks of the Huddersfield and Manchester Canal,  
minutes' walk from the siding of the L. & N.-W. Railway Co  
on which the Works are situate is bounded by the river Colne the  
ed Canal, property of the Colne Vale Dye and Chemical Co. property  
-W. Railway Co., and by the road which gives access thereto.

8,724 square yards or thereabouts, and is held on lease from Sir J. P. P.  
t., for a term of 999 years from the 1st January, 1877, at a yearly  
f £54. 10s. 6d.

consist of the following buildings and plant:—

SULPHURIC ACID CHAMBERS AND PLANT, consisting of  
len chambers—

1. 100 ft. by 20 ft. by 17 ft. by 16 ft.
- do. do. do. do.

ay Lussac Tower and Cisterns on top, Glover Tower, Acid Egg with  
re Cisterns and Acid Cooler, Air Engine and Steam Boiler, Set of  
Burners and Potting Furnace, Boiling-down Pan and two Store Tanks.  
SS HOUSE and RECTIFIED SULPHURIC ACID PLANT,  
ing four lead-lined Store Tanks, complete set of Earthenware  
rs, and other conveniences in connection therewith.

BRICK BUILDINGS AND PLANT USED FOR COPPERAS  
NG, capable of producing 10 tons per week.

BRICK BUILDINGS AND PLANT FOR NITRIC ACID  
NG. The Plant is arranged to work four cylinders together with four  
e sets of jars, Draught Pipes and connections, with run-off tanks and

PLANT AND BUILDINGS FOR NITRO-BENZOLE, con-  
eight Stills with gearing and all the requisite appliances i.e.,  
Feed Tanks, Run-off Tanks and Mixers.

SHED OR BUILDING USED FOR THE MANUFACTURE  
NITRO-BENZOLE, containing six Stills with all necessary gearing.  
K BUILDING USED AS ENGINE-HOUSE, with Horizontal  
Engine in good condition.

ER HOUSES and two Boilers, one high pressure and one low, both  
condition.

K BUILDING used as Offices, and Shed adjoining,  
have an abundant supply of water from the Canal of the L. & N. W.  
at an annual rental of £5. The purchaser will be entitled to, and  
r, the benefits and obligations of the agreement for this supply.

ser must take over at a valuation made by the Auctioneer, the trade  
in-trade, material, and loose effects in and upon the premises. A  
hese will be produced at the time of sale, or can be previously seen on  
the undermentioned persons and firms.

LARS AND CONDITIONS OF SALE may be had on application  
eer, at his Office, High Street, Huddersfield, to Mr. JOHN FREEMAN  
ered Accountant, 7, New Street, Huddersfield; to Messrs. RAMSDEN,  
Co., Solicitors, 80, Coleman Street, London, E.C.; or to

Messrs. RAMSDEN, SYKES & RAMSDEN,

Solicitors, 1, Westgate, Huddersfield.

5th May, 1896.

## FACTORY INSPECTION.

THERE is always much of interest in the annual report of  
Mr. Sprague Oram, and the last report of this gentleman  
as the Chief Inspector of Factories and Workshops is a  
worthy prelude to his retirement, which we understand is to  
take place shortly.

The report naturally deals very extensively with the textile  
industries, and in connection therewith is a most interesting  
collection of opinions on the much-discussed topic of steaming  
in weaving sheds. There is a most pronounced statement  
proceeding from Dr. Dunbar, of Blackburn, the sum and  
substance of which is that he is emphatically in favour of  
steaming, in reasonable moderation, as being conducive to a  
better state of health than would prevail if the practice were  
to be entirely abandoned.

There are, however, other items which more closely concern  
our readers. The most important of these relates to the use  
of solvents in rubber works.

Miss Anderson finds it difficult to refrain from the sen-  
sational, but she certainly has hold of a genuine grievance  
this time, and so should be allowed a little latitude in the  
matter of detail, as the effects of carbon bisulphide, in par-  
ticular, and also of benzine on operatives, are undoubtedly  
serious enough to warrant all reasonable preventive measures  
being adopted.

The symptoms are distressing, and more so perhaps on  
account of the indirect effects, but at the same time we feel  
assured that if the inspectors would co-operate with the  
manufacturers, and substitute a little sound advice and  
assistance for empty plaints, they would not find employers  
backward in adding them. Harrowing details, not wholly  
untainted by indirect exaggeration, owing to their being  
derived from somewhat isolated instead of typical cases, do  
not mend or even minimise the evil, while they are very apt  
to rumple the feelings of those who foolishly make enemies  
of inspectors.

This tendency is one that is greatly to be regretted as there  
is another way of looking at matters. If Government  
inspectors can only be looked upon as necessary evils that  
must be endured friction soon arises. It is always as well  
to avoid falling out with the powers that be, and though a  
friend at court may be only for the few, it is just as well to  
eschew all that may give offence to the courtiers you may  
come in contact with. Bearing this in mind, would it not be  
wiser to view the case in a different though admittedly  
selfish light? Inspectors will come—they have to come.  
Why not make a point of getting something out of each visit?  
Make them think for you. They have more time in which to  
do it, and generally will do it better. Instead of looking on  
inspectors as a crowd of faultfinders, miss no opportunity of  
turning them into counsellors. It should never be forgotten  
that manufacturers have a strong weapon in that they are



able to meet any suggested innovation by asking for a hint as to the wherewithal, and information on such points as efficiency and the best form of installation. This acts as a wonderful check, as the faddist soon finds his life becoming burdensome, whereas the man who speaks from experience, and whose words are prompted by the conviction that they are called for, is nearly always ready and willing to outline a scheme. Should it chance that he is not, for his own reputation's sake, as well as out of consideration for his official capacity, it is more than probable that he will have thought one out before his next visit. The results attained under the Alkali Acts have shown that this principle is feasible and advantageous if honourably applied by manufacturers. We say honourably advisedly, since it stands to reason that if an inspector suggests a policy, and can indicate a path by which it can be pursued, the same should at least be honestly considered by the employer. An additional feature is that in the case of a prosecution it is at least helpful to be able to point out that, desirable as the object in dispute might be, there were considerable difficulties surrounding it, since the inspector, with all his experience, could not throw any light on the matter. Thus, if the delay on the manufacturer's part is at all justifiable, he can strengthen his position by falling back on the inspector as it were. Of course if the latter has given reasonable assistance, then the manufacturer must look out for himself, as it is only right he should have to.

Where friction prevails, however, a working basis anything like the foregoing is impossible, and not infrequently trouble ensues. On the other hand, though at the outset the actuating motive would be the desire to get as much as possible out of the inspector, yet if this course were pursued, there is no doubt that concurrently with the alleviation of the friction between inspectors and the inspected, the original motive would certainly be replaced by a better one, and something akin to a feeling of comradeship would result. In consequence all would benefit—employer, inspector, and employed.

Reverting to the report of Miss Anderson, one of the most helpful sections is that giving the comparative conditions of labour in France and Belgium. From the comparison it appears that the imposition of an age limit, and regulations affecting ventilation, would not handicap the English rubber trade unduly. Miss Anderson has evidently been fortunate in securing an employer who has been through the mill as an allied supporter, and this combination of the ethical and the practical should bear good fruit. Cannot they suggest some palliative measures worthy of them?

### THE MINERAL OIL INQUIRY.

DR. STEVENSON MACADAM, professor of chemistry in Edinburgh, gave evidence on Friday last week before Mr. Mundella's Committee on Petroleum, and expressed a strong opinion that no oil used for illuminating purposes could be considered safe which had a lower flash-point than 100° Fahrenheit close test. He would not, indeed, prohibit the sale of oil with a lower flash-point, but he would insist upon its being labelled, so that the public who used it should know that they were dealing with an oil which was attended with danger. He mentioned that by abstracting 10 per cent. of the spirit from the American oil it could be brought up to the flash-point which he recommended without any difficulty, and that the cost of this process would not amount to more than 1/4d. per gallon. On the question of the danger from lamps, the witness differed from previous witnesses like Lord Kelvin in that he preferred a strong glass to a metal reservoir, because experiments which he had conducted showed that the metal reservoir raised the temperature of the oil considerably more. He had never known any accidents take place from the vapour thrown off by Scotch oil. The chairman pointed out that in France and Germany oil was sold at 70° flash-point, and there were comparatively few accidents. Dr. Stevenson Macadam said he would still insist upon

the 100°, and that if there were fewer accidents in those countries was probably due to the higher intelligence of the people. Mr. Cross, a Scotch member of the committee, remarked that he was to hear such a statement from a countryman of his own. The man: You may be sorry, but I am afraid the statement is on true. The committee adjourned.

On Thursday, Professor Mendeleef (who was present at the of the Russian Government) gave evidence. He said the open point in Russia was about 200 degrees Fahrenheit. The lamp-burn this oil cost between 5s. and 6s. each, because the common could not burn it in consequence of its bad smell. Experiments demonstrate the safety of this oil, Mr. Cumber lighted a pile of with ordinary petroleum oil, and by pouring on it six or seven of the high-flash oil, the fire was extinguished, showing that oil high-flash point was as innocuous as water. The lesser number of accidents in England than in Germany arose, in his opinion, from the fact that the people were more careful, although the flash-point lower and they burned a more dangerous oil. Continuing, he said the shale oil made in Scotland was always of the same standard whilst Russian and American petroleum was always changing year to year. The supply of petroleum in Russia was increasing the wells were filling up more and more every year. Referring to the number of accidents in Russia, the professor attributed the number in Russia to the high flash-point of the oil. In reply to Jesse Collings, witness said he had no statistics to prove that there were fewer in Russia than in England.—Mr. Jesse Collings: Then take it that all comparisons are mere guesswork? Witness said not a tabular statement to prove it, but he had formed the impression from reading both the English and Russian newspapers with recorded accidents.

### EXPORTS OF PETROLEUM FROM U.S.

THE Chief of the Bureau of Statistics, Washington, gave the following returns of the exports of petroleum and petroleum products for April, 1896. The total shipments were 65,000 gallons, compared with 76,984,728 gallons in April, 1895. The ten months ending April 30th, 1896, was 716,672,313, against 748,174,861 gallons during the same period in 1895. Details of the shipments are as follow:—

|                    | CRUDE PETROLEUM.          | Gallons.   |
|--------------------|---------------------------|------------|
| Total, April, 1896 | .....                     | 8,063,113  |
| " " 1895           | .....                     | 10,441,130 |
|                    | NAPHTHAS.                 |            |
| Total, April, 1896 | .....                     | 59,914     |
| " " 1895           | .....                     | 1,297,851  |
|                    | ILLUMINATING.             |            |
| Total, April, 1896 | .....                     | 53,341,451 |
| " " 1895           | .....                     | 60,930,501 |
|                    | LUBRICATING AND PARAFFIN. |            |
| Total, April, 1896 | .....                     | 4,487,651  |
| " " 1895           | .....                     | 4,314,601  |
|                    | RESIDUUM.                 |            |
| Total, April, 1896 | .....                     | 43,171     |
| " " 1895           | .....                     | 96         |

THE CHEMICAL MEASUREMENT OF WATER.—At the last meeting of the Institution of Naval Architects, Mr. C. G. Stromeyer, paper proposing a chemical means for the measurement of circulating water, the contents of reservoirs, the flow of streams for similar purposes. He endeavoured, in effect, to apply to the same principle of chemical measurement which has long been used for determining the composition of furnace gases. In the case of the latter, a careful analysis is made of the fuel and of the products of combustion, as first steps to the determination of the character of the furnace-working. Complicated though this method may appear, more accurate than any known process of direct measurement of gas current by an anemometer; and it occurred to Mr. Stromeyer a similar method, if simplified, might with advantage be applied to the measurement of streams of water. The first essential to the success of any such process is the selection of a substance, to be added in bulk of water, which can be detected in an extreme state of dilution by reliable chemical tests. Salt (sodium chloride) was selected to answer this purpose; and when applied in the manner described by Mr. Stromeyer in his paper, gave results accurate to 0.4 per cent. A still more accurate determination could be made if, instead of salt, the rather expensive chemical nitrate had been injected into the waters. The accuracy attainable by this substance is such that the capacity of one of the Tilbury gravimetric holding about 60,000 tons of water could be determined chemically within 1 per cent. of its true amount. For this purpose, only the nitrate would need to be dissolved in the water, of which ounces would serve for the analysis.



## The Patent List.

This list is compiled from Official sources in the Manchester Laboratory, under the immediate supervision of E. Davis and Alfred R. Davis, who report professionally the value of Chemical Patents.

### APPLICATIONS FOR ENGLISH LETTERS PATENT.

**Regenerative Gas Furnaces.** F. Siemens. 11,433. May 26.  
**Obtaining Metals from Cyanide Solutions.** S. O. Cowper-Coles. 11,465. May 26.  
**Process for Manufacture of Carburetted Water Gas.** The Economical Apparatus Construction Co., Ltd., and L. L. Merrifield. 11,530. May 27.  
**Obtaining Valuable Products from Seaweed.** A. Krefling. 11,538. May 27.  
**Obtaining Sulphide of Aluminium which may or may not be combined with other Sulphides.** D. A. Peniakoff. 11,555. May 27.  
**Obtaining Gaseous Disinfecting Mixtures, mainly Formic Aldehyde.** H. L. 11,557. May 27.  
**Softening Apparatus.** H. L. Doulton and A. W. Manger. 11,559. May 27.  
**Obtaining Sewage.** G. T. Gillespy. 11,599. May 28.  
**Obtaining Rhea Fibre.** A. R. Wadell. 11,613. May 28.  
**Obtaining Gases.** H. Maxim. 11,621. May 28.  
**Obtaining Batteries.** E. J. Clulbe, A. W. Southey, and the Electric Motor Co., Ltd. 11,627. May 28.  
**Obtaining Water Gas.** J. E. Goldschmid and C. Dellwick. May 28.  
**Obtaining Chrome-dressed Leather.** K. Möller. 11,695. May 29.  
**Obtaining Insecticide.** F. E. Rutland. 11,716. May 29.  
**Obtaining and Purifying Water.** O. Guttman. 11,739. May 29.  
**Obtaining High Explosives.** S. A. Rosenthal. 11,746. May 29.

### EXTRACTS OF LATEST COMPLETE SPECIFICATIONS.

The abstracts are specially prepared for the Chemical Trade Journal, and the rights of publication are reserved. This is the earliest of abstracts of Chemical and allied patents accessible to the public.

**Improvements in Arrangements for Drying Slurry by the Waste Heat in Cement Kilns.** W. Joy, Snodland, Kent. Eng. Pat. 12,391. June 1895.

The waste heat from the cement kiln is caused to travel under a row of two or three chambers, placed one above the other, the floors of which are adapted for the reception of the slurry to be dried. The lower chamber is in connection with the kiln and the next chamber above it is the uppermost chamber, which has a roof of movable iron plates, constituting an open drying floor if desirable, is in turn in communication with the intermediate chamber and the chimney. In this way the gases pass from end to end of the chambers until they escape by the chimney.

Another arrangement is that of a chamber, with a floor adapted to the drying of slurry, communicating with the kiln, and having an arched roof which carries an open drying floor, the spandrels of the arches and spaces between them and the iron floor forming flues for the escape of the kiln gases. There are eight drawings.

**Improvements Relating to the Production of Acetylene Gas, and to the Utilization of the Same for Lighting Purposes.** G. Ragot, 163, Avenue de Wolxem, Forest-lez-Bruxelles, Belgium. Eng. Pat. 5,279. March 9, 1896.  
Acetylene is produced in an apparatus that works automatically. The features are the devices by which the generation of the gas is regulated according to the rate of consumption. Calcium or other material decomposed by water is of course the source of supply. The apparatus consists of two reservoirs, which can be fed automatically with water or carbide. These reservoirs are connected with a delivery which, by its upward and downward movement, effects the periodic admission of water into the carbide reservoirs. There is also a device for distributing the water so that it is delivered to the reservoirs alternately. In connection with the reservoir wherein the acetylene is produced there is a reducer which enables the pressure of the gas to be definitely lowered automatically, so that the gas assumes the required state. A special form of burner is described for burning the gas. There are seven figures.

**Improvements in the Manufacture of Artificial Stone, and Apparatus therefor.** W. P. Thompson, 6, Lord-street, Liverpool (communicated by La Société Anonyme La Néo-litho, of Moll, near Antwerp). Eng. Pat. 3,799. January 19, 1896.

The aim is to produce imitation sandstone which shall not be so porous as the product hitherto obtained. The use of agglutinants, increasing the degree of cohesion, generally produce a product

which resembles cement rather than sandstone. The patentee here endeavours to obtain a stone of close texture but possessing the characteristic porosity of sandstone. Sand and lime are treated under pressure with steam. There is no novelty in the conjoint use of these three, but novelty is claimed for the use of sand and lime together with steam alone without the addition of water.

A mixture of about 90% of sand with 10% of lime is treated in a special boiler, in moulds, at a pressure of five atmospheres, this being the minimum pressure at which stone of good quality can be obtained. The steam is admitted at two or three atmospheres until the mass is thoroughly saturated and the pressure then raised.

A high-pressure boiler of special construction is employed, being closed in front with a lid and fitted internally with tubes for distributing steam. There is also a track which conveys the moulds. The latter are formed of a frame of bars in combination with strong sheet plates, which are inserted at desirable points according to the size of stone to be made, and provided with openings for admitting steam. The plates are kept apart by flat iron struts, the whole being held together by tie-rods tightened by wedges.

**Improvements in the Extraction of Lead with Silver and Gold, or other metals, from Galena or Sulphides of Lead and Zinc, and from Mattes and (or) Refractory Ores.** H. E. Fry, 64, Billiter Buildings, E.C.; John David, Llwyndu, Glais, near Swansea; and C. Le Doux, 20, Woodfield-street, Morriston (R.S.O.), Glamorgan. Eng. Pat. 12,452. June 27, 1895.

The oxide and other compounds of zinc in the ores are removed by a flux which forms a fluid slag very free from lead. The flux is prepared in the following fashion: Seven parts by weight of burnt pyrites and about ten of nitrate cake or sulphate of soda are fused in a reverberatory furnace lined with basic bricks by preference, though a slag bottom will do. When in a semi-fluid state this flux is removed and allowed to cool.

The ore when prepared by a previous roasting to remove sulphides as far as possible, is smelted in a cupola furnace with 10 to 25% of the flux according to the nature of the ore. The amount of burnt pyrites added to the flux is also controlled by the amount of zinc in the ore. The lead is obtained as pig-lead, while the zinc is dissolved by the flux forming a thoroughly fluid slag, sufficient flux being used to ensure the attainment of this end.

Sometimes a little "matte" separates from the lead, forming a layer on the surface. This is carefully collected and exposed to the air, when in the course of a few days it disintegrates. The resulting powder is oxidised to remove the sulphur it contains and again put through the cupola, replacing an equal quantity of flux.

**Process for the Acidulation of Wools, Woollen Rags, or Tissues Intended to be Carbonised or Bleached.** G. Philips, Stolberg, near Aix-la-Chapelle, Prussia. Eng. Pat. 12,857. July 3, 1895.

By the ordinary treatment, if teasels and threads of cotton or flax are to be completely removed, it is necessary to use a fairly strong acid bath and to prolong the treatment. In consequence strong alkaline baths are necessary to ensure the complete neutralisation of the acid. Both of these conditions are injurious to the fibre of the wool.

To avoid this the patentee treats the materials under a vacuum. The vessel charged with the wool, &c., is sealed hermetically and coupled to an air-pump, by which it is exhausted as completely as possible. The connection with the acid reservoir is then opened and the acid is drawn in, care being taken to avoid the admission of any air. In this way the wool, &c., very soon becomes thoroughly saturated in a way quite unattainable in the presence of air under ordinary pressure. It has been found that by this method the same degree of carbonization can be obtained with an acid solution four or five times weaker than that usually employed. Naturally the injury to the wool fibres both in the acid and the subsequent alkaline treatment is very materially minimised.

**Manufacture of Vitreous Artificial Stone.** A. Hirsch, 30, Avenue de l'Opera, Paris. Eng. Pat. 14,187. July 25, 1895.

To produce imitation marble, coloured glass, or mosaics, a mixture of glass and ceramic ware, together with volcanic rocks such as basalt, is heated in a mould lined with refractory materials until partially or wholly fused. After the first fusion the moulds are placed in an annealing furnace and very slowly cooled. To produce a polished face a more easily fusible and finely broken mixture is placed in the bottom of the mould. In preparing mosaics rods of lead can be used to separate the tesserae and left to fuse into the mass. Colours can also be arranged by planning veins of suitable material which, when fused, produce a marble-like effect.

The final rocky or polished appearance is controlled by the stage to which the fusion is carried, experience showing when the mass has been fused sufficiently to form a solid and substantial block.



## Parliamentary Jottings.

### THE POLLUTION OF THE LEA AND THE BRENT.

In the House of Commons, last week, Mr. Cohen (Islington, E.), on behalf of Mr. T. H. Robertson (Hackney, S.), asked the President of the Local Government Board whether he was aware that the waters of the river Lea were polluted by the introduction of insufficiently disinfected sewage matter from the districts of Tottenham, Walthamstow, and Leyton, greatly to the detriment of the health of the inhabitants of South Hackney and other districts; and whether he could take any, and what, steps to prevent this infringement of the Rivers Pollution Acts.

Mr. Chaplin (Lincolnshire, Sleaford): As regards the pollution of the waters of the river Lea, I have been in communication with the district councils of the three districts referred to in the question. In the case of Tottenham, I am informed that the whole of the sewage of the district is pumped direct from the outfall works into the sewers of the London County Council. I do not find that the Local Government Board, during the last two years, have received any complaint in this matter as regards the Leyton district. With respect to Walthamstow, proceedings were instituted by the Leyton District Council for the purpose of obtaining an injunction to prohibit the pollution of the river by sewage from that district. An injunction was granted and the district council have submitted proposals for additional works with a view to preventing a continuance of the pollution. The Local Government Board have no authority to institute proceedings under the Rivers Pollution Prevention Acts; proceedings under these Acts may be instituted by the County Council or the council of any district affected by the pollution. Moreover, any powers which the Lea Conservancy Board have as regards the pollution of the river have been reserved to them by the Rivers Pollution Prevention Act of 1876.

Mr. Bartley (Islington, N.) asked whether the right hon. gentleman's attention had been called to the filthy condition of the river Brent after it received the sewage water from the sewage farm at Ealing, Middlesex; whether he was aware that this stream ran close to the large district schools with some thousand children, and through the densely populated district of Brentford; and whether he would cause a local inquiry to be made with a view of putting a stop to the serious danger to the health of the neighbourhood from this polluted stream.

Mr. Chaplin: The attention of the Local Government Board was directed last year to the condition of this river, and the Board, after obtaining a report from one of their inspectors on the subject, communicated with the Thames Conservancy Board and the County Council urging that action should be taken with the view of preventing the continuance of pollution of the river. In consequence of the reference in the question to the Ealing district, I have made inquiry of the council of that district, and am informed that there is no source of pollution within their district, and that, with the view of preventing pollution of the river by others, they have determined to take steps to obtain an injunction. With respect to the Willesden District Council, the effluent from whose works was regarded by the Thames Conservancy as unsatisfactory, the Local Government Board have now before them an application from the council for sanction to a loan for the improvement of their works of sewerage and sewage disposal. Powers of instituting proceedings for preventing pollutions are vested in the Thames Conservancy and the County Council, and I will again communicate with these authorities.

### DAINGEROUS EMPLOYMENTS.

On Thursday Mr. Schwann asked the Home Secretary whether his attention had been called to the statements of various inspectors (in the recent reports of Her Majesty's Chief Inspector of Factories and Workshops) that proper precautions were still not taken in india-rubber works to protect the workers, often women and girls, from the pernicious effects of sulphurous fumes, which caused various illnesses, nausea, and even paralysis; and also to the statement in the same report as to the absence in some hat manufactories of suitable fans and other means of ventilation to prevent the entry into the lungs of the workers of particles of fur and dust given off in the fur-blowing processes; and whether he had power, and would exercise it with renewed energy, to cause the proprietors in both industries to take every precaution to obviate the highly deleterious effects of these operations.

Sir M. White Ridley: Yes, sir; I have seen the statements of Her Majesty's inspectors. Both points are now under the consideration of the Committees on dangerous trades, and when I receive their reports I will consider what further precautions may be necessary.

### INSPECTION IN THE BRASS TRADE.

Replying to Sir H. Vincent,

Sir M. White Ridley said the special rules to carry out, so far as the law allowed, the recommendations of the Departmental Committee with regard to the further inspection of the brass trade had been accepted by 1,540 firms, and though 175 firms had raised objection, it was hoped to obtain their consent without having recourse to arbitration.

## IMPORTANT AMENDMENT OF THE AUTO-BILL.

THE Government Bill to amend the law with respect to the locomotives on highways was revised on Tuesday by the Committee of the House of Peers, Lord Herschell presiding. Earl of Morley, on behalf of Lord Thring, moved that not only certain restrictions at present applied to road engines be removed, but such a carriage should be allowed to draw one car, provided both together did not weigh more than four tons. This proposition was made in the interest chiefly of agriculture. Lord Harris, on behalf of the Local Government Board, opposed the amendment, on the ground that they were not yet sure that the concession already made to motors would be quite safe. Admitting that, from an agricultural point of view, it would be better to put produce into a separate than into the motor carriage itself, he still urged that they should till they saw the result of the legal relaxations offered by the Bill in its present form. The Earl of Cranbrook, referring to the fact that the measure would relieve horseless carriages from special restrictions of speed, expressed the opinion that they ought not to travel faster than four miles an hour. The Earl of Kimberley had heard, on the subject, seemed to him good authority, that auto-motors would not be successful unless allowed to draw one carriage each. The amendment was adopted by 34 votes to 16, the Government being defeated. Harris assured the Earl of Kimberley that there would be full power to protect bridges from injury by excessively heavy horseless cars. The Bill passed through committee.

## THE RIBBLE JOINT COMMITTEE.

ON Monday a meeting of the Ribble Joint Committee was held at the County Hall, Preston; Sir J. T. Hibbert (chairman) presiding. The report of the Chief Inspector was gone through, and the cases of several local authorities and manufacturers were adjourned for periods of from one to three months. Messrs. Potter and Co. of Almond's Mill, Darwen, were asked to attend the next meeting of the Committee, to show cause why proceedings should not be taken against them. The Clerk was instructed to apply to the Local Government Board for power to proceed against Messrs. J. and J. W. H. paper makers, Simonstone, Padham, and Mr. William Sumner, of Fulwood, the brook into which the effluent from the brewer being described by the inspector as a public nuisance. Mr. Naylor (chief inspector) drew attention to the disinclination of firms to use precipitants, and the Rev. R. C. Fletcher (Tarleton) said that this was probably due to economical motives, but they would have to consider the interests of the stream even at the expense of private firms. Mr. Gregory, who attended as a deputation from the Scotshaw Brook Company, Darwen, to show cause why proceedings should not be taken against them, said theirs was the eighth firm on the River Darwen. They had already spent £1,200., and it would probably cost them £500. more if they had to use a precipitant. Mr. Naylor said that the firms had spent a lot of money on the work, but it had been rendered useless because a few hundred pounds more were required. Mr. Gregory said their effluent was better than the water they took from the river. If they had to get the water quite pure they would be financially ruined, as they would not be able to sell their production. The Committee adjourned the matter for two months. Mr. Gregory consulted with the inspector as to the use of a precipitant. Mr. M'Kenzie and Co., calico printers, of Accrington, also attended to show reason why proceedings should not be instituted against them. They intimated that they were now using precipitants, and on promising an endeavour to improve their effluent, the matter was further adjourned for two months. A deputation attended from the Waterside Paper Company, Darwen, who had been detected depositing their sludge on the Darwen at night, and stated that this had been done through forgetfulness of a servant, who had had to be discharged. The Committee were of opinion that the circumstances were somewhat serious, but they consented to overlook the occurrence on the promise of the deputation to exercise more care in the future. Mr. Calvert, of Messrs. J. H. Calvert and Brothers, of Oakenshaw Printworks near Accrington, attended, and said that they had been prevented from proceeding with the concreting of their tanks by the frost at the beginning of March. It was stated that they had already been a considerable leniency, and they were granted a further adjournment of one month only. A deputation from the Roach Bridge Paper Company, Samlesbury, stated that they were the last firm on the river, and consequently received all the other firms' pollutions. A sample was produced, which the Chairman said was more like ink, and a sample considerably clearer was said to be the same water after it passed the firm's settling tanks. On promising to experiment with precipitants, the deputation were granted an adjournment of



The Clerk (Mr. F. C. Hulton) said the Croston Urban Dis-  
council had been asked to send a deputation to show why pros-  
should not be taken against them. He explained that notice  
edings was served on the 11th May, 1892, and an order of  
ained in February, 1893, and they were then allowed eighteen  
to carry it out. The order expired in August, 1894, and ab-  
nothing had been done, and they were now applying again for  
time. The Chairman said it seemed to him to have been a case  
not to do it." The deputation said negotiations were pending  
e Railway Company for land, and they expected the consent of  
al Government Board as to borrowing powers on Tuesday.  
airman said they would exercise still further leniency and allow  
other month, but they would assuredly take proceedings at the  
hat time. This concluded the business.

## THE COST OF CALCIUM CARBIDE.

issuance of the notice given in the *Journal* (466, p. 273) some  
eks back, we are now enabled, by the courtesy of the *Progressive*  
produce the report on the trials made at the instance of our  
sing contemporary, concerning the cost of manufacturing carbide  
m for the ultimate production of acetylene gas:—  
calorific value of acetylene is, according to Julius Thomsen,

molecular weight 64—40 parts Ca, 24 parts C.  
fic gravity when compared with air 0.91.  
ity at 32° and 30° bar. pr. 0.073 lbs. per cubic foot.  
r at 60° Fahr. at atmospheric pressure dissolves about one  
of acetylene.

odour of acetylene gas has been commonly compared with that  
c. Further observations lead to the belief that the odour  
by acetylene is more like that of phosphorous, due, no doubt,  
hosphide and sulphide of hydrogen present in the gas.

the explosiveness of acetylene, it has been found that a mixture  
volume of acetylene with one volume of air burns with a dull  
ne evolving dense black smoke; acetylene mixed with 1.25  
is own volume of air is slightly explosive. Explosiveness  
s until it reaches a maximum with about twelve times its  
of air, then gradually decreases in violence until one volume  
e 10.20 of air is non-explosive.

generally supposed that carbide of calcium quickly disintegrates  
omposes, giving its gas off at once; but it was observed during  
estigation at Spray, that numerous small particles of carbide  
le as refuse evolved some days later unmistakable evidence of  
ng considerable quantities of gas, notwithstanding the extreme  
e.

xperiments as to the poisonous quality of acetylene seems to  
en determined by Dr. Rosemann and M. Grehan, both of  
gree that under ordinary conditions, such as would prevail in  
of the gas as an illuminant, it is no more dangerous than the  
own gases.

heoretical yield of one pound of pure carbide of calcium, is  
f. dry gas per pound, measured at 60° Fahr. and under a  
: of 30 inches of mercury or approximately 6 c.f. it saturated  
uous vapour. The tests conducted for the *Progressive Age*  
average nett yield of 4.926 c.f. of moist gas per pound of nett  
or 4.696 c.f. per pound of gross carbide. The acetylene was  
lly pure.

de of calcium is now being manufactured in America, at Spray,  
y the Willson Aluminium Company; at Niagara Falls by The  
Company, and at the works of the Electric Smelting and  
ium Company, Lockport, N.Y.

rope, by the Electro Chemische Werke, at Bitterfeld, Prussia,  
ausen by the Aluminium Industrie Actien, Gesellschaft.  
rmany at the Manheim Works, at Baden. In France by the  
-Metallurgical Works, at Froges and Vallorbes.

ORT OF MESSRS. HOUSTON, KENNELLEY AND KINNICUTT.

te 16th and 17th of March, 1896, these gentlemen visited the  
carbide plant of the Willson Aluminium Company, at Spray,  
gham County, North Carolina, U.S.A., and made an examina-  
test of the process of manufacturing calcium carbide as there  
on.

T.—The plant consists essentially of a pair of electric furnaces  
ucing the carbide, electric generators for supplying the current,  
e for driving the electric generators, and suitable apparatus for  
ing and mixing the coke and lime required to charge the  
f.

INE.—The water motor is a horizontal twin Leffel turbine  
30" in diameter, and rated as capable, under 28 feet fall, of  
ing 300 H.P. at 206 revolutions per minute and  $\frac{3}{4}$  gate opening.  
e opening is controlled by hand.

ELECTRIC GENERATORS.—The turbine is belted, directly by tandem  
belts to two Thompson-Houston alternators, of the 14-pole, 120 KW—  
1,070 revolutions per minute type, giving a maximum effective pressure  
of 1,155 volts at full load. Each alternator is excited by a standard  
Thomson-Houston exciter of the 110 volt—18 amperes—2,500 revolu-  
tions per minute type. Both exciters are run by tandem belts from an  
outboard pulley on one alternator shaft. The terminals of the  
alternators are connected to a switchboard supplied with primary volt-  
meters, ammeters, and switches.

The mains from the switchboard run to a group of 16 alternating  
current transformers, eight to each alternator, representing a total  
capacity of 240 KW. or 321.8 H.P. These transformers are employed  
to lower the pressure from 1,000 volts at the alternator terminals, to  
100 volts at the furnace terminals. They are of the No. 4—15,000  
watt—60 cycle, Thompson-Houston type. The secondary coils of these  
transformers supply, in parallel, two bundles of copper cables leading  
to the furnaces, which are situated within a few feet of the switchboard.  
Each cable is about  $\frac{3}{4}$ " in diameter, and is composed of 123 separate  
wires. There are 16 cables to each furnace, eight to the upper and  
eight to the lower electrode.

FURNACES.—There are two open electric furnaces placed side by  
side in one brick structure. The side and partition walls are of ordinary  
brick, while the front is open but partly covered by cast-iron doors.  
The floor space in each furnace is 3' x 2' 6", and a height of about  
eight feet, they rise into a single short chimney, which serves to carry  
off the gases evolved during the operation of the furnaces.

At the base of the furnaces is placed a heavy iron plate about 6'  
long, by 2½' wide, and 1" to 2" thick. On this bed plate rest two  
carbon plates, 3' x 2½' x 6" to 8" thick, one in each furnace. These  
carbon base plates in connection with the iron plate form the lower  
electrodes. They are repaired from time to time with carbon left over  
from partly consumed upper electrodes. Their renewal thus involves  
no extra cost in materials.

The upper electrode for each furnace is a heavy carbon block 12" x  
8" in cross section, and 36" long. It is composed of six carbons, laid  
side by side, each 4" x 4", 36" long, and weighing, approximately,  
30lbs. The electrode is protected by a casing of 3-32" sheet iron. The  
interstices between the casing and the carbons are filled with a hot mix-  
ture of pulverised coke and pitch, so that the electrode becomes prac-  
tically a solid mass of carbon in intimate contact with an iron shell.  
The electrode is clamped vertically, in a metal holder supported by a  
vertical copper rod 3" x 3", passing through the roof of the furnace,  
to a chain running over a pulley to a hand-wheel by the side of the  
switchboard, so that the upper electrode can be raised and lowered at  
will by the switchboard attendant.

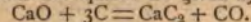
During use the upper electrode consumes at the rate of about 1-16"  
per working-hour.

MATERIALS.—The materials employed in the manufacture of calcium  
carbide are lime and coke, and, incidentally, the carbon of the electrodes.

CRUSHING AND MIXING MACHINERY.—The coke and lime are  
first passed through a crusher and are subsequently ground by rollers.  
They are then thrown in proper proportions into a revolving ball mixer  
provided with pebbles. The operation effects an intimate mixture be-  
tween the pulverised coke and lime.

METHOD OF OPERATION.—The coke and lime, after being separately  
pulverised, are weighed out in suitable proportions into the ball mixer.  
The lime is pulverised fine enough to pass through a 20-mesh sieve, and  
the coke is pulverised fine enough to pass through a 50-mesh sieve.

The chemical proportions required are given by the reaction,



According to this equation, 56 parts by weight of lime should be mixed  
with 36 parts of carbon to yield by combination 64 parts of calcium  
carbide. In other words, the mixture should contain theoretically  
60.87% of lime and 39.13% of carbon.

The material is taken from the mixer to the furnace, and the charge  
is started by throwing in a few shovelfuls upon the furnace floor, and  
establishing the arc through it between the upper and lower electrodes.  
At first the pressure and current at the furnace terminals are very un-  
steady, but, after the first quarter of an hour, they become moderately  
steady, at about 1,600 amperes, and 100 volts, respectively. Under  
the action of the arc, which is usually about 3" long, the mixture im-  
mediately under the surface of the upper electrode is gradually con-  
verted into molten calcium carbide. The carbide tends to fill up the  
space between the electrodes, so that the upper electrode has to be  
raised to maintain the arc, thus allowing the new mixture to fall in  
from the sides. Fresh mixture is shovelled into the furnace from time  
to time. Flames of ignited carbonic oxide, coloured by the volatilisa-  
tion of calcium, rise from the surface around the upper electrode, but  
are smothered as far as possible by stoking and packing. The switch-  
board attendant continues to raise the upper carbon electrode by hand-  
wheel, screw, and chain, according to the indications of the volt-  
meters and ammeters, until the electrode has been lifted through its  
full range of about 30 inches. The addition of new mixture is then  
stopped, and the current maintained, until the last portions added



have been sufficiently acted upon. The current is then cut off and directed into the neighbouring furnace, which is operated, while the first cools down sufficiently to permit of the withdrawal of the carbide in the solid form. This mass of carbide has roughly the form of a vertical prism of rectangular cross-section, slightly tapering towards the top. Its surface is coated with a slag containing carbon, calcium oxide, calcium carbonate, and calcium carbide. Below this surface is the mass of carbide, which remains fluid in its interior for many hours after the cessation of the electric current.

The quantity of mixture unconverted into carbide varies from 50 to 75% of the charge. This is removed and can be employed in the next charge. As, however, a part of the carbon in this mixture has been oxidised and carried off as carbon dioxide, a small quantity of fresh carbon in the form of pulverised charcoal is added to maintain the original proportion of ingredients.

**OUTLINES OF TESTS.**—Two complete runs were made in the same furnace, one on the 16th and one on the 17th of March. In each run the mixture put into and withdrawn from the furnace was weighed and carefully sampled, as was also the yield of calcium carbide. The samples of lime and coke, and of the mixtures before and after the runs, were placed in tin cans and labelled. Samples of calcium carbide were taken from the top, bottom, sides, and centre of the mass and placed in tin cans, the covers of which were soldered to prevent the entrance of moisture. All the samples were taken to the laboratory of the Worcester Polytechnic Institute at Worcester, Mass., and carefully analysed.

The electric power delivered to the primary coils of the transformers supplying the furnace during the runs were measured by a Thomson wattmeter. The indications of the voltmeters on the switchboard were also checked by a Weston voltmeter.

When the upper electrodes were lifted clear of the furnace charges, the power delivered to the 16 transformers on open circuit was  $3 \frac{1}{2}$  KW = 4.29 H. P., the primary pressure being 1,000 volts, and the exciting current 4.7 amperes.

#### DETAILS OF TEST:— FIRST RUN.

In the first run, 1,200 lbs. of lime and 800 lbs. of coke were placed in the ball-mixer, making one short ton of material. The analysis of the lime gave:—

|                                       | Per cent. |
|---------------------------------------|-----------|
| Water and Carbon Dioxide.....         | 4.55      |
| Silica .....                          | 0.28      |
| Phosphoric Acid .....                 | 0.014     |
| Iron and Aluminium Oxides .....       | 1.58      |
| Calcium Oxide .....                   | 88.86     |
| Magnesium Oxide.....                  | 4.27      |
| Alkali, Sulphuric Acid and Loss ..... | 4.46      |
|                                       | 100.000   |

The analysis of the coke gave:—

|                 | Per cent. |
|-----------------|-----------|
| Moisture.....   | 0.40      |
| Ash .....       | 8.60      |
| Sulphur .....   | 0.48      |
| Phosphorus..... | 0.0055    |
|                 | 9.4855    |

Of the 2,000 lbs. weighed into the ball mixer, 1,903 lbs. of mixture was weighed into the furnace representing a loss of 97 lbs. in the mixer or in transport.

The analysis of this mixture showed that it contained:—

|                                                                                   |               | Per cent. |
|-----------------------------------------------------------------------------------|---------------|-----------|
| Calcium Oxide .....                                                               | 995.6 lbs. or | 52.32     |
| Carbon .....                                                                      | 709.9 „ or    | 37.3      |
| Residue, Oxides of Magnesium, Iron, Aluminium, Carbon Dioxide, Moisture, etc..... | 197.5 „ or    | 10.38     |
|                                                                                   | 1903.0 „ or   | 100.00    |

The furnace run lasted three hours (4.0 p.m. to 7.0 p.m.) The mean total primary current was 156 amperes, and the mean primary pressure 1,000 volts. This approximately corresponds to a mean total secondary current of 1,560 amperes, at a mean pressure of 100 volts, supplied to the furnace. The total electric energy supplied to the primary coils of the transformers was 454.8 kilowatt-hours, or 609.7 h.p. hours, representing an average activity of 151.6 kilowatts, or 203.2 horse power. Allowing 5 per cent. loss in the transformers, the corresponding total energy supplied to the furnace is 432.1 kilowatt-hours, or 579.2 h.p. hours, representing an average activity of 144 kilowatts or 193.1 h.p.

On the morning of the 17th, the furnace was emptied, and 226½ lbs. of gross calcium carbide were recovered, with 1,332 lbs. of mixture unacted upon.

The carbide mass was coated with a slag. This slag contains so calcium carbide, since it gives off a little acetylene on treatment with water, but it was estimated that the amount of slag consisting of materials other than calcium carbide, weighed 16 lbs., leaving 210 lbs. of nett carbide in the mass.

The number of cubic feet of moist gas given from one pound of carbide at a pressure of 30 inches of mercury and a temperature of 60° was:—

|                                                    | Cubic feet |
|----------------------------------------------------|------------|
| Bottom of mass, mean of three determinations.....  | 4.55       |
| Centre of mass, mean of three determinations ..... | 4.80       |
| Top of mass, mean of three determinations .....    | 4.97       |
| Mean.....                                          | 4.773      |

Average sample of whole mass, mean of four determinations, 4 cubic feet.

The analysis of the mixture unacted upon gave:—

|                                                                               | lbs.    | Per cent. |
|-------------------------------------------------------------------------------|---------|-----------|
| Calcium oxide.....                                                            | 726.8   | 54.55     |
| Carbon.....                                                                   | 459.5   | 34.49     |
| Residue, oxides of magnesium, iron, aluminium, carbon dioxide, moisture, etc. | 145.7   | 10.96     |
|                                                                               | 1,332.0 | 100.00    |

#### SECOND RUN.

The second run was conducted in a manner similar to the first. 1,100 lbs. of pulverised lime were deposited with 800 lbs. of pulverised coke in the ball-mixer, making 2,040 lbs. of material. The analysis of lime gave:—

|                                        | Per cent. |
|----------------------------------------|-----------|
| Water and Carbon Dioxide.....          | 4.02      |
| Silica .....                           | 0.34      |
| Phosphoric Acid .....                  | 0.015     |
| Calcium Oxide .....                    | 89.00     |
| Alkali, Sulphuric Acid, and Loss ..... | 0.605     |
| Magnesium Oxide.....                   | 4.38      |
| Iron and Aluminium Oxides .....        | 1.64      |
|                                        | 100.000   |

The coke contained:—

|               | Per cent. |
|---------------|-----------|
| Moisture..... | 0.50      |
| Ash.....      | 8.50      |

Of the mixture, 1,891 lbs. were weighed into the furnace, making a loss of 149 lbs. in mixing, transport, and weighing out. The mixture contained, by analysis:—

|                                                                        | lbs.  | Per cent. |
|------------------------------------------------------------------------|-------|-----------|
| Calcium Oxide .....                                                    | 1,030 | 54.50     |
| Carbon.....                                                            | 680   | 35.97     |
| Residue, Oxides of Magnesium, Aluminium, Carbon Dioxide, Moisture, &c. | 181   | 9.53      |
|                                                                        | 1,891 | 100.00    |

The furnace run lasted two hours and forty minutes (2.0 p.m. to 4.40 p.m.). The total electric energy supplied to the primary coils of the transformers was 408.9 KW hours, or 548.1 H.P. hours, representing a mean activity of 153.4 KW, or 205.6 H.P. Allowing 5 per cent. loss in the transformers, the total energy delivered to the furnace was 388.5 KW hours, or 520.7 H.P. hours, representing a mean activity of 145.7 KW, or 195.3 H.P.

The mixture, all withdrawn from the furnace at 6 p.m., weighed 1,438 lbs., and contained:—

|                                                                               | lbs.    | Per cent. |
|-------------------------------------------------------------------------------|---------|-----------|
| Calcium oxide .....                                                           | 788.9   | 54.86     |
| Carbon .....                                                                  | 490.8   | 34.13     |
| Residue, oxides of magnesium, iron, aluminium, carbon dioxide, moisture, etc. | 158.3   | 11.01     |
|                                                                               | 1,438.0 | 100.00    |

The gross calcium carbide removed from the furnace at 4.30 p.m. weighed 203 lbs., with an estimated quantity of slag, as before, amounting to 10 lbs., leaving 193 lbs. of nett carbide.

The average yield of the nett calcium carbide, from an average sample of the whole mass, and four determinations, was 5.09 cubic feet of moist acetylene per pound, at a pressure of 30" of mercury, at a temperature of 60°F.

The results of these two runs may be tabulated as follows:—

#### YIELD OF CALCIUM CARBIDE IN TEST RUNS.

|                                | 1st Run. | 2nd Run. |
|--------------------------------|----------|----------|
| Coke (Commercial, 90.51% pure) | 800 lbs. | 800 lbs. |
| Lime (Commercial, 88.86% pure) | 1,200 „  | 1,240 „  |
| Materials sent to mixer .....  | 2,000 „  | 2,040 „  |



|                            |         |         |               |
|----------------------------|---------|---------|---------------|
| al withdrawn from mixer :— |         |         |               |
| Oxide .....                | 709'9 " | 680 "   | Joint Result. |
| .....                      | 995'6 " | 1,030 " |               |
| .....                      | 197'5 " | 181 "   |               |

nace charge ..... 1,903 " 1,891 " 3,794 lbs.

al withdrawn from furnace :—

|               |         |         |           |
|---------------|---------|---------|-----------|
| Oxide .....   | 459'5 " | 490'8 " | 950'3 "   |
| .....         | 726'8 " | 788'9 " | 1,515'7 " |
| .....         | 145'7 " | 158'3 " | 304'0 "   |
| Carbide ..... | 216'5 " | 193' "  | 409'5 "   |
| .....         | 10' "   | 10' "   | 20' "     |

nace discharge ..... 1,558'5 " 1,641' " 3,199'5 "

or Calcium Carbide .. 121'8 " 108'54 " 230'34 "

ost in furnace..... 128'6 " 80'66 " 209'26 "

xpended ..... 250'4 " 189'20 " 439'60 "

Oxide for production of

e ..... 189'4 " 168'7 " 358'1 "

Oxide lost in furnace.. 79'4 " 72'4 " 151'8 "

Oxide expended..... 268'8 " 241'1 " 509'9 "

ure of coke for loss of

..... 275'2 " 207'9 " 483'1 "

ure of lime for loss of

..... 302'3 " 270'9 " 573'2 "

l ..... 577'5 " 478'8 " 1,056'3 "

ure of coke per pound

Carbide..... 1'271 " 1'077 " 1'18 "

ure of lime per pound

Carbide ..... 1'397 " 1'403 " 1'40 "

ure of coke per pound

s Carbide ..... 1'215 " 1'024 " 1'125 "

ure of lime per pound

s Carbide ..... 1'335 " 1'335 " 1'335 "

579'2 H.P. hours 520'7 H.P. hours 1099'9 H.P. hours

24'13 H.P. days 21'7 H.P. days 47'83 H.P. days

432'1 KW. hours 388'5 KW. hours 820'6 KW. hours

f gross Carbide per furnace H.P. hour 0'3911 0'3898 0'3905

f nett Carbide per furnace H.P. hour 0'3738 0'3700 0'3723

f gross Carbide per furnace H.P. day 9'384 9'355 9'372

f nett Carbide per furnace H.P. day 8'97 8'894 8'936

omes of gross Carbide per furnace

hour ..... 0'2378 0'237 0'2374

omes of nett Carbide per furnace

hour ..... 0'2273 0'2253 0'2263

et of moist gas at 30" and 60° F. per

of gross Carbide ..... 4'569 4'839 4'696

et of moist gas at 30" and 60° F. per

of nett Carbide ..... 4'78 5'09 4'926

et of moist gas per furnace H.P. day 42'88 45'26 44'01

et of dry gas at 30" and 60° F. per

of pure Calcium Carbide (theoretical

..... 5'9

(To be concluded.)

OM IN RUBBER.—The price of best Para rubber has gone up the past few weeks from 2s. 9d. to 3s. 9d. per pound, and it is by the trade that 4s. or so may be reached. Owing to the sources of supply, the article, of course, easily lends itself to the action of speculators and cornerers. But neither speculation and for tyres is altogether answerable for the present high n. It seems that, owing to the recent dry season in the traders have not been able to get their rubber down from the reaches of the Amazon, though this state of affairs may be d any day, when it is believed prices will give way. A still kle, not to say sticky, commodity is gutta-percha, the particular of caoutchouc species which is used for cables, and whose f supply is almost entirely limited to the Malay peninsula. r four years ago, when the price stood at 2s. 9d. per pound, a hich was bringing a cargo of some hundreds of tons from re was lost. The destruction of what was to the particular market upply had the effect of forcing up the price to the neighbour- 8s. 6d.; and even to this day the market has never recovered e disaster, for present quotations are about double what they ore the unfortunate vessel went down with its valuable cargo.

## Market Reports.

### TAR AND AMMONIA PRODUCTS.

Benzols are firm, and well held at 2s. 9d. for 90's and 2s. 4d. for 50/90's. For forward, July-December, the prices are 2s. 8d. to 2s. 9d. and 2s. 3d. respectively. Carboic acids are practically unaltered, quotations for 60% crude and 40% crystals being 2s. 1d. and 7d. Naphthas are inclined to be easier. So far there is no change in crude, which still stands at 8d., but solvent is quotably lower at 1s. 2½d. Creosote, 1d. Anthracene steady at 10½d. for 30% A, and 9d. for B. Pitch quiet at 32s., f.o.b., East Coast.

There is practically nothing fresh to report in the position of sulphate of ammonia. Prices have gone a trifle easier, partly owing to the absence of buyers, and partly through the action of the southern and northern markets. Makers on the whole, however, are firm, and in view of the covering that has to be done for June deliveries, it would appear probable that the demand will improve as the month progresses. There is still no quotation for prompt at Beckton. London outside makes to-day are worth £8. 2s. 6d., Liverpool £8. 2s. 6d., Hull £8., and Leith £7. 18s. 9d., all prompt.

### REPORT ON MANURE MATERIAL.

The recent rain is bringing in a few late orders, but apart from that the manure season is practically over. There is a fair amount of business doing for forward delivery, but manure makers are carrying forward considerable stocks, and their policy so far is to buy sparingly of material for next season. Shippers of Florida 75/80% phosphate rock having made heavy sales within the past few months, mostly for the Continent, are inclined to assume a firmer attitude, the raising being now on a much reduced scale. The quotation for U.K., however, remains 6d. per unit. The quotation for 58/63% Algerian phosphate is 5¼d., and for 63/70% grade 5½d. per unit, 1896 shipment. For South Carolina river rock sellers ask 5¼d. per unit, but for good lines 5d. would be accepted. A cargo of River Plate bones has been sold, but the price does not transpire. £3. 15s. is about the value for summer-autumn shipment, and this price would no doubt do for anything afloat. On spot £3. 15s. per ton is the value of Bombay bone meal. For June-July shipment there would now be buyers at £3. 12s. 6d. For August-September shipment £3. 15s. per ton is required, ex quay, Liverpool. There having been good demand for crushed Kurrachee bones for the Continent, and supplies not being very abundant at the other side, £4. is asked for shipment, but U.K. buyers will not pay the price. Nitrate of soda is easier in all positions, demand during the past two months having been disappointing, and larger stocks have been left to carry forward than was anticipated in early spring. On spot ordinary quality may now be had at 7s. 9d. per cwt., and refined at 7s. 10½d. Due cargoes, and cargoes near at hand, are scarcely worth more than 7s. 9d. per cwt. Autumn shipments are quoted 8s. 1½d. to 8s. 3d., according to position, ordinary quality.

### MISCELLANEOUS CHEMICAL MARKET.

In the alkali trade there is no marked feature of improvement either in bulk of business doing or in value of the products. Ammonia alkali is steady at the makers' quotation of £3. 7s. 6d. per ton, bags, f.o.r. works, and usual extras for casks and delivery f.o.b. Caustic soda all round is quiet, but without further change in prices, which are as follows:—F.o.b. Liverpool, 77%, £9. 7s. 6d. per ton; 74%, £8. 7s. 6d. per ton; 70%, £7. 7s. 6d.; 60%, £6. 7s. 6d. per ton, 10-ton lots and upwards. Soda crystals quiet at 35s., bags, f.o.r. Leblanc ash nominally 1d. to 1¼d. per degree, f.o.b. For bleaching powder there is rather more enquiry, and the reduction in price recently made for the United States trade will no doubt tend to increase the volume of business in this article. Sulphur remains at £3. 12s. 6d., f.o.r., and there is a fairly steady demand. Sulphate of copper, £18. 10s. to £18. 15s., f.o.b. In chlorate of potash and soda there is no further change to report, prices being steady at 4½d. and 6d. per lb. respectively. Acetate of lime, brown, £4. c.i.f., but only little business doing thereat. Other acetates and acetic acid are quiet, prices generally being rather in buyers' favour. For potash, caustic and carbonate, demand is still brisk and prices are firm. White powdered arsenic continues very scarce and £23. to £24. for spot or early delivery is nearest value. Forward sales done at £23. 10s. Yellow prussiate of potash quiet, with generally a lower tendency. Cyanide 98% 1s. 1d. to 1s. 2d. per lb. Sulphocyanides dull. Nitrate of soda steady with rather a firmer tone for future delivery. In chemicals, generally, both for home trade and export, business is far from brisk or satisfactory to producers.



## LIVERPOOL OIL AND COLOUR MARKET.

WEDNESDAY.

**OILS.**—Palm oil being scarce, owing to the small quantities being offered, remains fairly firm on the whole. Lagos has been done for July at £18. 15s. Olive is firm, there being a fairly good business doing in the better qualities. There is practically no change in linseed, Liverpool makes still being quoted 19s. to 20s. 6d. per cwt. in export casks. The market is steady. Cottonseed, though quiet, is steady at 16s. 3d. to 17s. for Liverpool refined. American, 16s. 9d. to 17s. per cwt. Castor oil is firm, particularly good seconds Calcutta, which is now quoted 2½d. to 2½d., with a good demand at these figures. First pressure French remains at 2¼d. to 2½d. per lb. Tallow continues to be firmly held, but there is virtually no business passing. Resin is quiet, save for the spot demand, which is satisfactory for common, full prices being obtainable. Spirits of turpentine in small quantities or for immediate delivery cannot be had under 23s. per cwt. For forward there are offerings at 20s. 6d. Petroleum is unaltered, with American 5¼d. to 7½d., and Russian refined 5¼d. per gallon.

**COLOURS.**—Prices are steady, and practically without change. Ochres: Oxfordshire, common, £10.; medium, £12.; best, £15. Derbyshire, common, 40s.; medium, 50s., best, 60s.; Welsh, best, 90s., seconds, 50s., and common, 18s.; Irish, Devonshire, 40s. to 45s.; French, J.C., 65s. Umber: 40s. to 45s. White lead, £16. Red lead unchanged. Venetian red, £6. to £10. Cobalt: Prepared oxide, 9s. 9d.; black, 9s.; blue, 6s. Oxide of iron: Common, £7.; medium, £10.; finest, £20. Zinc oxide, £22. 10s. to £25.

## THE METAL MARKETS.

**LONDON, WEDNESDAY.**—Pig iron, easy: Scotch warrants closed at 46s. 7d.; Middlesbrough, 37s. 4½d. cash, and hematite, 47s. 2½d. Copper, firm: Chili bars, G.O.B.'s and G.M.B.'s, closed at £47. 17s. 6d. to £48. 2s. 6d. cash, and £48. 2s. 6d. to £48. 7s. 6d. three months. Tin, steady: Straits closed at £60. to £60. 10s. cash, and £60. 10s. to £61. three months; Australian, £61. 5s. to £61. 10s. English ingots, £64. Lead: Spanish, £11.; English, £11. 2s. 6d.; Silesian spelter, ordinary, £18. 7s. 6d. Nickel, 1s. 1½d. Antimony, £30. 5s. Quicksilver, quiet: First hands, £6. 10s.; second hands, £6. 9s. Copper shares, steady: Cape, 2½ to 2½; Copiapo, 2½ to 2½; Libiola, 2½ to 2½; Mason and Barry, 3 to 3¼; Rio Tinto, 2½ to 2½; Tharsis, 5½ to 6.

**GLASGOW, WEDNESDAY.**—Market flat, with fair business. Scotch done at 46s. 9d., 46s. 7d., and 46s. 7½d. cash, also at 46s. 10d., and 46s. 8½d. one month; closing with buyers at 46s. 7d. cash, sellers ask 46s. 8d. Cleveland done at 37s. 6½d. and 37s. 7d. one month; closing with buyers at 37s. 4½d. cash, sellers ask 37s. 5d. Cumberland hematite done at 47s. 6½d. cash, and 47s. 5½d. one month; closing with buyers at 47s. 2½d. cash, sellers ask 47s. 3½d. Middlesbrough hematite closes with buyers at 44s. 7d. cash, sellers ask 44s. 8d.

## WEST OF SCOTLAND CHEMICALS.

GLASGOW, TUESDAY.

The general market remains on the whole as it was a week ago, complaint being as usual rife on the score of the want of activity. Sal ammoniac has been marked £2. down per ton. Sulphate of copper has been fluctuating from day to day, and was down a bit towards the end of the week, but is now on the mount again, at £18. 15s., and well called for at that. In alkalis there is a fair trade moving for home needs, but new orders from abroad are still scanty. Prices are nominally unchanged. Mineral oils and paraffins (excepting lubricants alone, which are in good case) find themselves now well into the dead season with very little moving, though prices are in no case further deteriorated. Sulphate of ammonia continues slow, though not additionally covered in price—say £8. to £8. 1s. 3d. prompt.

Chief prices current are:—Soda crystals, £2. 2s. 6d., nett, Tyne; soda ash, 48/52°, £4. to £4. 15s. nett, Tyne; white alkali, 48/52°, £4. 10s. to £5. nett, Tyne; alum in lump, £5. to £5. 5s. nett, Glasgow; caustic soda, white, 74° £8. 7s. 6d., 70/72° £7. 7s. 6d., 60/62° £6. 7s. 6d., and cream 60/62° £6. 7s. 6d., all nett, Liverpool; bleaching powder, £6. 17s. 6d. nett, Tyne; saltcake, 23s. 6d.; borax, English, refined, £20., and boracic acid, £30. nett, Glasgow; bicarbonate of soda, 5-cwt. casks, £6. 10s., and 1-cwt. casks £6. 15s. nett, Liverpool; bichromate of potash, 4½d. nett, for Scotch and English deliveries (for export, 4¼d. nett, f.o.b. Glasgow); bichromate of soda, 3¼d. nett, for Scotch and English deliveries (for export, 3½d. nett, f.o.b. Glasgow); chlorate of potash, 4½d. less 5%, any port; nitrate of soda, 7s. 10½d. to 8s. 1½d.; sulphate of ammonia, £8. to £8. 1s. 3d., f.o.b., Leith; sal ammoniac, first and second white, £37. and £35. nett, any port; sulphate of copper, £18. 15s. less 5%, Liverpool; paraffin scale, hard,

1½d. to 1¾d., and soft, 1¾d. to 2d. per lb.; paraffin wax, 12 semi-refined, 2¼d. to 2½d. per lb.; paraffin spirit (naphthal), 7d. per gallon; paraffin oil (burning) No. 1, 6¼d., and crystal, 6½d., Glasgow and other big centres, for Scotch buyers (English sales ½d. lower); ditto (lubricating) 865° £4. 10s. to £5., 885° £5. 1 to £6., and 890/895° £6. to £6. 10s. Week's imports of sugar Greenock were nil.

## TYNE CHEMICAL REPORT.

TUESDAY

The chemical trade is steady, but with only a limited volume business. Prices remain unaltered. Soda crystals, £2. 2s. 6d. ton, gross weight, locally. Caustic, 76/77%, £9. 5s. per ton; 76/77. 10s to £7. 15s. per ton. Sulphur firmer, at £3. 17s. 6d. per ton. Bleaching powder, softs, £7. 5s. per ton, nett; hards, £7. 10s. per ton, nett; caustic soda, 76/77%, £9. 5s. per ton, nett; do., 70%, £7. 10s. per ton, nett; recovered sulphur, 2 cwt. bags, £3. 17s. 6d. per ton, soda ash, 48%, £4. per ton, nett; do., 50%, £4. 3s. 4d. ton, nett; do., 52%, £4. 6s. 8d. per ton, nett; alkali, 36%, £2. 10s. per ton, nett; white alkali, 48%, £4. 10s. per ton, nett; do., 52%, £4. 15s. per ton, nett; do., 52%, £5. per ton, nett; hyposulphite of soda, 5-7 cwt. casks, £6. 5s. per ton, nett; do., 1 cwt. kegs, £6. 5s. per ton, nett; silicate of soda, 75° Tw., £2. 12s. 6d. per ton, do., 100° Tw., £3. per ton, nett; do., 140° Tw., £3. 7s. per ton, nett; soda crystals, casks, £2. 2s. 6d. per ton, gross weight; do., 2 cwt. bags, £2. 2s. 6d. per ton, nett weight; chlorate of potash, 5d. per lb., less 6%; pearl harden £3. per ton, nett; pure white sulphate of alumina, £3. 17s. per ton, nett; blanc fixe, £7. 5s. per ton, nett; chloride of barium refined crystals, £6. 15s. per ton, nett; do., 90/95%, crude calc. £6. per ton, nett; sulphide of barium, crystals, £4. 15s. per ton, carbonate of alumina, £30. per ton, nett; aluminate of soda, 1 per ton, nett.

**SALT.**—South Durham salt is steady at 9s. per ton, f.o.b. Tees.

**COALS.**—Trade here practically remains unchanged, and, with exception of steam coals, the demand is only quiet. Coke continues excellent demand and very firm. Prices are as under:—Best North briar steam, 8s. 3d. to 8s. 6d. per ton; second qualities, 7s. 3d. to 7s. 6d. per ton; small steam 3s. 9d. to 4s. per ton; gas coals, 6s. to 6s. 6d. per ton; household coals, 10s. to 10s. 6d. per ton; bituminous coals, unscreened, 6s. 3d. to 6s. 6d.; coke firm, 15s. to 16s. per ton.

## HULL PAINT, OIL, AND COLOUR REPORT.

TUESDAY

**OILS.**—Business remains very quiet, and values continue in depressed positions. Linseed oil has declined in value, and refined cotton oil very quiet. The import during the week of linseed has been 37 quarters, viz., from the River Plate, 31,540 quarters; Riga, 4 quarters; Constantinople, 181 quarters; Kustendje, 1,557 quarters; Königsberg, 500 quarters; and Harlingen, 20 quarters. Linseed oil lower, and quoted: Spot, 17s. 3d., naked; June-August, 17s. 7½d. and September-December, 17s. 10½d. to 17s. 9d.; boiled and reboiled £1. to £2. per ton extra. The export for the week has been 1 cwt. The import of cottonseed during the week has been 2 tons, from Alexandria. Refined cotton oil is quiet: Spot, 14s. naked; June-August, 14s. 6d.; and November-April sold at 14s. casks £1. and ordinary barrels £1. 10s. per ton extra. Export refined oil for the week has been 5,140 cwt. Turpentine, 21s. per cwt. Olive oil quiet and unchanged. Herring oil, £14. oils, £17. to £20. per ton. Castor oil, 2½d. per lb. Boiled siccative oil, £12. per ton. Brown wool grease, £8. per ton. American cotton oil soap, 70% fatty acids, £10. 10s. per ton. Locomotive grease, £10. 10s. per ton. Belt dubbin, 12s. per gallon.

**CAKES.**—Linseed cakes steady: 95% pure, £5. 10s.; Russian, £5. 7s. 6d.; Americans, £5. Oilcakes, £4. 15s. per ton. Cotton cakes steady: Best makes, £3. 17s. 6d.; seconds, £3. 12s. 6d. R cakes unchanged.

**PAINTS.**—Makers busy, with a good all-round demand. White and red leads unchanged, also oxide of zinc. Dry mineral oil from £3. 10s. to £8. Various assorted paints from £11. per ton. Lime blues, from £12. to £16. Ultramarines, 3d. to 6d. per lb. Paint remover, £1. 5s. to £1. 10s. per cwt. Imperial black varnish, £5. 10s. per ton, in barrels. Varnish stains, from 8s. per gallon. Oak varnish, from 5s. 6d. per gallon.

## New Companies.

**Worcester Blue Brick and Fire Clay Co., Ltd.**—CAPITAL £2,000., in £1. shares. This company has been formed to carry the business now carried on at Westbourne Bridge Wharf, Amberley road, Paddington.



**Twyford's, Ltd.**—CAPITAL, £250,000, in £10. shares. This company has been formed to acquire and carry on the business of porcelain and fire-clay goods manufacturers, now prosecuted by T. W. Twyford, Hanley. The subscribers to the memorandum of association are:—T. W. Twyford, Cliffe Vale Potteries, Hanley, potter; H. Twyford, Moor House, Biddulph, gentleman; W. Weir, Hillesden, Newcastle, Staffordshire, manager; J. Tait, Lime Cottage, Wolstanton, traveller; W. Noake, 52, Clifton Terrace, Newcastle, Staffordshire, manager; G. Boreham, 25, Aynsley-road, Sheldon, Hanley, secretary; A. Martin, 3, Newcastle-road, Sheldon, Hanley, manager.

**Edward Ryan and Co., Ltd.**—CAPITAL £10,000, in £10. shares. This company has been formed to take over as a going concern the business of soap manufacturers now carried on by Messrs. E. Ryan and Co., at Cork. The subscribers to the memorandum are:—E. Ryan, Blackrock-road, Cork, merchant; W. I. Green, 1, Belgrave-place, Cork, merchant; M. D. Daly, 14, Great George's-street, Cork, merchant; J. Kelleher, Sunday's Well, Cork, merchant; J. C. Newsom, Patrick's-street, Cork, merchant; J. Ogilvie, Warren's-place, Cork, merchant; M. J. Stapleton, 60, South Mall, Cork, accountant.

**Roydon Brick and Tile Co., Ltd.**—CAPITAL £25,000, in £1. shares. This company has been formed to trade as brick and tile manufacturers, at Roydon, Essex, under an agreement between T. Quinn and J. Carolan. The subscribers to the memorandum of asso-

ciation are: W. Moss, 8, Leadenhall-street, E.C., merchant; L. R. S. Walcott, 1, Gray's Inn-place, Gray's Inn, agent; S. Greenslade, 9, Jelf-road, Brixton, builder; T. Quinn, 43, Marloes-road, Kensington, manufacturer; B. B. Anthony, Hill View, Twickenham, contractor; A. Slack, 56, Burghley-road, Highgate, clerk; F. H. Poskett, 35, Esmond-road, Kilburn, clerk.

**Oakley Collieries, Ltd.**—CAPITAL £19,215, in £1 shares. This company has been formed to carry on the business of colliery proprietors, coke and brick manufacturers. The subscribers to the memorandum of association are:—J. Dennis, Dalkeith, builder; G. Hill, 46, Frederick-street, Edinburgh, S.S.C.; W. Marshall Middlemas, 18, South Bridge, Edinburgh, clothier; W. Hunter, 28, Queen-street, Edinburgh, bookbinder; T. J. Pentland, Teviot-place, Edinburgh, publisher; A. Guthrie, 64, Frederick-street, Edinburgh S.S.C.; R. T. McGregor, 6, York-place, Edinburgh, solicitor.

## Gazette Notices.

### PARTNERSHIPS DISSOLVED.

D. DIX and R. C. GREEN, cement manufacturers, Saffron Walden.  
G. T. CROSLAND and R. SAYLES, drysalts, Huddersfield and Elland, under the style of C. H. Taylor.

## IMPORTS OF CHEMICAL PRODUCTS

AT

### THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

#### LONDON.

Week ending May 30th.

#### Acetic Acid—

Holland, 10 pks. Little & Johnston  
" 50 120 bals. Philipps & Graves  
" 50 crbys. R. W. Greeff & Co.  
" 35 22 pks. 50 cks. 10 cs. A & M. Zimmermann

#### Acetone—

Germany, 10 drs. G. S. N. Co.

#### Alkali—

France, 90 c. J. Harrison

#### Alum—

Holland, 172 cks. Ohlenschlager Brs.

#### Alumina—

Holland, 80 cks. H. Wallace & Co.

#### Alumite—

Sydney, 52 t. J. Allen & Co.

#### Ammonium Chloride—

Holland, 10 cks. H. Lorenz

#### Anhydrous Ammonia—

Denmark, 8 pks. Tegner, Price & Co.

#### Asbestos—

Italy, £22 Tingle, Jacobs & Co.

#### Barium Chlorate—

Germany, 23 cks. Petri Brs.

#### Barium Chloride—

Holland, 12 cks. Greeff & Co.

#### Barytes—

Belgium, 130 cks. W. Harrison & Co.

Holland, 57 W. Harrison & Co.

#### Bones—

Sydney, 3 t. Thames S. T. & L. Co., Ltd.

Melbourne, 41 Low, Sons & Bedford

#### Bromine—

Germany, 30 cs. A. & M. Zimmermann

#### Camphor—

Japan, 34 tubes S. Figgis & Co.

" 99 R. Warner & Co.

Germany, 2 cks. Lewis & Pent

China, 16 cs. T. H. Lee

#### Caoutchouc—

U.S., Col., 70 c. Stiebel Brs.

U. States, 18 Major & Field

France, 24 W. Pope & Co.

Rangoon, 26 Girard Brs. & Co.

Zanzibar, 50 L. & I. D. Jt. Co.

Rangoon, 70 Prop. Hay's Wf.

Singapore, 25 Elkan & Co.

#### Zanzibar, 7

Mexico, 9

Germany, 4

" 24

" 64

" 185

" 13

Rangoon, 25

U. States, 23

Germany, 90

#### Carbolic Acid—

Holland, 50 cks.

#### Castor Oil—

Belgium, 6 brls.

France, 1 cs.

#### Caustic Potash—

France, 9 drs.

Belgium, 60

Germany, 60

Holland, 635

Germany, 57

" 400

France, 42

Germany, 22

" 18

France, 13 brls.

Holland, 26 cks.

Belgium, 4 cs.

Germany, 10

Denmark, 1

#### Cream of Tartar—

Spain, 5 cks.

Holland, 20

France, 30

" 5

#### Dextrine—

Holland, 50 bgs.

#### Dyestuffs—

Italy, 156 pks.

" 1,122

Rangoon, 550 bxs.

" 700

" 700

" 1,150

" 200

Singapore, 450

Rep. Col., 285 bgs.

Belgium, 20 cks.

Forbes, Forbes & Co

L. & I. D. Jt. Co.

Clarke & Smith

F. Huth & Co.

Wallace Brs.

Forbes, Forbes & Co.

Prop. Bull Wf.

A. Howden & Co.

Chautard & Christensen

Anderson, Weber & Co

J. Owen

Freudentheil & Co.

Nicholson's Wf. Co., Ltd.

J. A. Reid

T. Palmer

J. M. Steel & Co.

otherwise undes.

Hernu, Peron & Co.

9 cs. 1 ck. T. H. Lee

A. & M.

Zimmermann

Flageolet & Co.

Domeier & Co.

Philipps & Graves

Typke & King

G. Rahn & Co.

O. Scholzig

L. & I. D. Jt. Co.

Bailey & Leatham

B. & F. Wf. Co.

Kirkpatrick & Co.

B. & F. Wf. Co.

W. C. Bacon & Co.

Phillipps & Graves

Thames S. T. & L. Co., Ltd.

B. Jacob & Sons

Brown & Elmslie

Leach & Co.

Hicks, Nash & Co.

Arracan Co., Ltd.

H. A. Litchfield & Co.

R. G. Hall & Co.

H. Johnson & Sons

J. Swire & Sons

Sperling & Williams

Leach & Co.

#### Denmark, 1

France, 110

Austria, 200 brls.

Denmark, 3

E. Indies, 44 cts.

" 57

#### Logwood

Jamaica, 49 t.

#### Myrabolams

E. Indies, 642 bgs.

" 3,379

#### Saffron

Spain, 1 cs.

#### Tanners' Bark

Durban, 54 t.

" 60

#### Valonia

A. Turkey, 5 t.

" 100

" 101

" 23

" 182

" 10

" 102

#### Farina—

Holland, 50 bgs.

" 50

#### Glucose—

U. States, 600 pks.

" 500

" 500

" 300

" 901

" 650

" 40

" 2,000

" 1,000

" 500

" 150

" 550

" 50

" 500

" 100

" 250

France, 400

U. States, 2,359

Gluc—

£947

Evans, Lescher & Co.

L. J. Levinstein & Sons

A. J. Humphery

Bailey & Leatham

Wallace Brs.

Parsons & Keith

Carvalho Brs. & Co.

H. R. Daniels

Darling Brs.

R. Quincey & Son

J. H. Fox & Co.

A. & W. Nesbitt

A. J. Humphery

W. H. Mitchell

Boutcher,

Mortimore & Co.

A. & W. Nesbitt

Adam Brs.

Anning & Cobb

A. J. Humphery

Hicks, Nash & Co.

Beck & Pollitzer

J. Knill & Co.

J. Barber & Co.

Vokins & Co., Ltd.

Thames S. Tug & L. Co.

Seaward Brs., Ltd.

Mortimer & Co.

Beresford & Co.

L. Sutro & Co.

Ohlenschlager Brs.

Fellows, Morton & Co.

E. Dixon

Faulkner & Co.

Deering & Robottom

T. M. Duche & Sons

Union L. Co.

W. Balchin

Crosse & Blackwell

G. Hedges

L. Norman

R. G. Hall & Co.

#### Lamp Black—

Sweden, 40 cks.

Germany, £9

#### Lime—

Germany, 14 cks.

" 7

#### Litharge—

Germany, 62 cks.

#### Magnesian—

Germany, 9 t.

#### Manganese—

U. States, 100 brls.

Belgium, 8 dms.

#### Methyl Alcohol—

U. States, 100 brls.

Belgium, 8 dms.

#### Mica—

E. Indies, £15

" 15

" 330



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|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Pumice Stone</b> —<br>Italy, 16 t. F. Claydon & Co.<br>" 15 O'Hara & Hoar<br>" 5 G. S. N. Co.                                                                                                                                                                                                                                                                                                                                                                                                                                              | Holland, 20 Burrell & Co.<br>" 20 A. & M. Zimmermann<br>" 80 T. & W. Farmiloe<br>Belgium, 30 Sawyer, Sons, & Co.<br>Germany, 18 Taylor Bros.<br>" 18 Randall Bros.<br>" 35 D. Storer & Sons<br>" 64 M. Ashby, Ltd.<br>Belgium, 20 brls. Perkins & Homer<br>" 20 cks. Burrell & Co.                                                                                                                            | New York, 349 brls.<br>Boston, 600<br>" 50 F. W. Simonds & Co.<br><b>Glue</b> —<br>Antwerp, 5 bls.<br>Rotterdam, 400 bgs. 2 cs.<br>Rouen, 28 pks. Co.-op.<br>W'sale Society, Ltd.<br>Hamburg, 133 Grainger & Co.<br><b>Limestone</b> —<br>Antwerp, 2 cs. J. T. Fletcher & Co.<br>" 40 crts.      | <b>Ultramarine</b> —<br>Rotterdam, 2 cks.<br><b>Yarnish</b> —<br>Rotterdam, 2 cks.<br>New York, 4 brls. W. A. Warren<br><b>White Lead</b> —<br>Ghent, 21 bxs.<br>Rotterdam, 39 cks. 20 dms.<br><b>Wood Pulp</b> —<br>Sannesund, 4,433 bls.<br>Rotterdam, 241<br>Montreal, 1,620 bbls.<br>Fredrikshald, 2,735 H. Tyrer & Co.<br>Gothenburg, 48 M. Relf & Co.<br><b>Zinc Oxide</b> —<br>Antwerp, 60 brls.<br>Rotterdam, 50 cks. 25 dms.<br>New York, 80<br><b>Zinc White</b> —<br>Rotterdam, 160 cks. |
| <b>Quicksilver</b> —<br>Spain, 10,139 flsks. N. M. Rothschild & Sen<br><b>Rosin</b> —<br>France, 34 brls. J. Watt & Son<br><b>Saltpetre</b> —<br>Holland, 2 cks. Philipps & Graves<br>Germany, 50 J. Hall & Son<br>E. Indies, 100 bgs. L. & I. D. Jt. Co.<br>Holland, 85 J. Greig                                                                                                                                                                                                                                                             | <b>Wood Pulp</b> —<br>Holland, 270 bgs. Philipps & Graves<br>Norway, 902 W. E. Bott & Co.<br>" 107 W. G. Taylor & Co.<br>Holland, 120 Hernu, Peron & Co.<br>Sweden, 6,814 Henderson, Craig & Co.<br>" 480 W. G. Taylor & Co.<br>" 3,024 Moreton Cox Bros.                                                                                                                                                     | <b>Linseed Oil</b> —<br>Copenhagen, 15 brls.<br><b>Lithopone</b> —<br>Rotterdam, 20 cks. J. Mathews & Co.                                                                                                                                                                                        | <b>Manganese Borate</b> —<br>Hamburg, 2 cs.<br><b>Manganese Ore</b> —<br>Hamburg, 9 cks.<br>Pots, 2,789 t.<br>Vizagapatam, 1,000 Darwen & Mostyn Iron Co.                                                                                                                                                                                                                                                                                                                                           |
| <b>Soda</b> —<br>Belgium, 295 c. F. Claydon & Co.<br>Holland, 1,370 R. Waters<br>Germany, 5 cs. L. & I. D. Jt. Co.<br><b>Soda Ash</b> —<br>Holland, 930 c. R. Waters                                                                                                                                                                                                                                                                                                                                                                          | <b>Zinc Oxide</b> —<br>Germany, 125 brls. M. Ashby, Ltd.<br>" 68 cks. J. Matton<br>Holland, 25 M. Ashby, Ltd.                                                                                                                                                                                                                                                                                                 | <b>Stratoni</b> , 2,306<br><b>Minium</b> —<br>Rotterdam, 9 cks.<br><b>Ochre</b> —<br>Baltimore, 1,440 brls.<br>Rouen, 10 cks. Co.-op. W'sale Society, Ltd.<br>Montreal, 85 brls.<br><b>Paint</b> —<br>Boston, 12 cs. Bahr, Behrend & Ross<br>N. Orleans, 300 kgs. 2 brls. Blundell, Spence & Co. | <b>MANCHESTER</b><br>Week ending May 30th.                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Sodium Acetate</b> —<br>Holland, 15 cks. J. Owen<br>France, 21 C. J. Capes & Co.<br><b>Sodium Hyposulphite</b> —<br>Holland, 200 kgs. R. W. Greeff & Co.<br>Belgium, 130 cks. F. Boehm                                                                                                                                                                                                                                                                                                                                                     | <b>LIVERPOOL.</b><br>Week ending May 28th.                                                                                                                                                                                                                                                                                                                                                                    | <b>Paraffin Scale</b> —<br>Baltimore, 100 brls.<br>New York, 1,167 Thompson & Bedford<br><b>Phosphates</b> —<br>Ghent, 1,000 bgs. J. T. Fletcher & Co.<br><b>Pitch</b> —<br>Rotterdam, 3 cks.<br>Dunkirk, 2<br>N. Orleans, 2 brls. Blundell, Spence & Co.                                        | <b>Acetate of Lime</b> —<br>New York, 3,736 bgs.<br><b>Acetic Acid</b> —<br>Antwerp, 40 blns.<br>Rotterdam, 2 cks.<br><b>Alumina Sulphate</b> —<br>Rotterdam, 29 cks.<br><b>Aniline Salt</b> —<br>Rotterdam, 5 cks.<br><b>Antimony Fluoride</b> —<br>Hamburg, 3 cks.<br><b>Antimony Salt</b> —<br>Rotterdam, 6 cks.<br><b>Antimony Oxide</b> —<br>Hamburg, 1 ck.                                                                                                                                    |
| <b>Starch</b> —<br>Belgium, 534 cs. T. H. Lee<br>" 100 Leach & Co.<br>Holland, 190 Hernu, Peron, & Co.<br>Belgium, 810 E. & T. Pink<br>Holland, 40 J. Barber & Co.<br>" 208 Philipps & Graves<br>Belgium, 810 Sawyer, Sons, & Co.<br>" 80 J. Barber & Co.<br>" 40 Lehmann & Co.<br>U. States, 50 bgs. Beck & Pollitzer<br>" 150 R. G. Hall & Co.<br>" 250 T. M. Ducho & Sons<br>Belgium, 355 cs. F. Claydon & Co.<br>" 20 Hore & Scrivener<br>" 120 Taylor Bros.<br>U. States, 100 bgs. Ohlenschlager Bros.<br>Holland, 115 cs. G. Rahn & Co. | <b>Acetic Acid</b> —<br>Hamburg, 15 cs.<br>Rotterdam, 30 balloons 17 carboys<br><b>Aniline Dyes</b><br>Paris, 13 cks. Bunter & Co.<br><b>Barium Carbonate</b> —<br>Rotterdam, 240 bgs.<br><b>Barytes</b> —<br>Rotterdam, 13 cks.<br><b>Bone Ash</b> —<br>B. Ayres, 74 bgs. H. Brown<br><b>Bone Meal</b> —<br>Calcutta, 3,360 bgs.<br><b>Calcium Carbonate</b> —<br>Rouen, 2 dms. Co.-op. W'sale Society, Ltd. | <b>Potash</b> —<br>Dunkirk, 13 cks. 77 dms.<br>Rotterdam, 31<br><b>Pyrites</b> —<br>Huelva, 2,889 t. Matheson & Co.<br><b>Rosin</b> —<br>Boston, 1,500 brls.<br><b>Saltpetre</b> —<br>Hamburg, 4 cks. 20 kgs.<br>Calcutta, 1,977 bgs. Ralli Bros.                                                | <b>Asbestos</b> —<br>Rotterdam, 4 cs.<br><b>Barytes</b> —<br>Rotterdam, 100 bgs.<br><b>Bone Ash</b> —<br>Rio Grande, a qty.<br><b>Boric Acid</b> —<br>Leghorn, 62 brls.                                                                                                                                                                                                                                                                                                                             |
| <b>Stearine</b> —<br>Holland, 13 cks. J. Owen<br>Japan, 10 bgs. Deering & Robottom<br>France, 80 Walbaum & Tosetti                                                                                                                                                                                                                                                                                                                                                                                                                            | <b>Carbolic Acid</b> —<br>Bordeaux, 6 cs.<br><b>Castor Oil</b> —<br>Calcutta, 560 cs. Ralli Bros.<br><b>Caustic Potash</b> —<br>Rouen, 35 pks. Co.-op. W'sale Society, Ltd.                                                                                                                                                                                                                                   | <b>Soap</b> —<br>Philadelphia, 63 crts. 800 bxs.<br>New York, 4 pks.<br>Hamburg, 25 bls.<br>Rotterdam, 3 cs.<br><b>Soapstone</b> —<br>Bordeaux, 200 bgs. G. G. Blackwell, Sons & Co.                                                                                                             | <b>Colours</b> —<br>Antwerp, 6 cks. 11 cs. 152 pks.<br>Rotterdam, 64 55 54 brls.<br>Boulogne, 6 Peron, & Co.                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Sulphur</b> —<br>Belgium, 33 t. Sawyer, Sons, & Co.<br>Italy, 5 F. Smith<br>" 6 J. Connell & Co.<br>" 70 G. Boor & Co.<br>" 16 P. Hecker & Co.<br>" 100 Johnson & Hooper<br>" 30 Typke & King<br>" 5 J. Kitchin, Ltd.<br>" 200 W. C. Bacon & Co.<br>" 200 A. Hunter & Co.<br>" 200 Brandram Bros. & Co.                                                                                                                                                                                                                                    | <b>Chemicals (otherwise undeciphered)</b><br>Rotterdam, 5 cs.<br><b>Chrome Ore</b> —<br>Baltimore, 64 cks. P. R. M'Quie & Son<br><b>Colours</b> —<br>Rotterdam, 6 cks. 5 cs. 5 tubs<br><b>Cottonseed Oil</b> —<br>N. Orleans, 856 brls.<br><b>Cream of Tartar</b> —<br>Barcelona, 5 pks. Sachse & Klemm                                                                                                       | <b>Starch</b> —<br>Philadelphia, 800 bgs. Gabain & Co.<br>Hamburg, 180 cs.<br>Antwerp, 105 57 pks. J. T. Fletcher & Co.<br>Boston, 300 bgs. Stafford Bros. & Co.<br>Rotterdam, 140 Brown, Geveke & Co.                                                                                           | <b>Creosote Salt</b> —<br>Hamburg, 2 cks.<br><b>Dyestuffs</b> —<br>Alizarine<br>Rotterdam, 12 cks.<br>Cutch<br>Paris, 23 cs.<br>Indigo<br>Rotterdam, 2 chts<br>Logwood<br>Laguna, 300 t.<br>Shumac<br>Palermo, 1,560 bgs. 200 bls.                                                                                                                                                                                                                                                                  |
| <b>Talc</b> —<br>France, 430 Brach & Rothenstein<br>" 80 G. G. Blackwell, Sons, & Co.                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <b>Dyestuffs</b> —<br>Cochineal<br>Gd. Canary, 15 bgs.<br>Cutch<br>Rangoon, 1,000 bxs.<br>Divl Divl<br>Hamburg, 1 cs.<br>Extracts<br>Philadelphia, 350 bxs.<br>Hamburg, 150<br>New York, 10 brls. J. Sharples & Co.                                                                                                                                                                                           | <b>Stearine</b> —<br>Philadelphia, 250 tcs. Armour & Co.<br>New York, 100<br>Boston, 281 440 hds.<br>" 100 115 brls.<br><b>Tallow</b> —<br>Philadelphia, 250 tcs. Armour & Co.<br>New York, 100<br>Boston, 281 440 hds.<br>" 100 115 brls.                                                       | <b>Farina</b> —<br>Hamburg, 400 bgs.<br>Rotterdam, 500<br><b>Gelatine</b> —<br>Hamburg, 2 cs.<br>Paris, 3<br><b>Glucose</b> —<br>Stettin, 1,000 bgs. Stott, Coker, & Co.<br>New York, 150 brls.                                                                                                                                                                                                                                                                                                     |
| <b>Tartaric Acid</b> —<br>Holland, 3 pks. 1 ck. B. & F. Wf. Co.<br>" 4 F. C. Devon & Co.<br>Spain, 5 W. C. Bacon & Co.<br>Holland, 1 J. Barber & Co.<br>" 20 kgs. 20 cks. Kirkpatrick & Co.                                                                                                                                                                                                                                                                                                                                                   | <b>Fustic</b><br>Tampico, 3,114 ps. W. H. Thompson & Co.<br>Trieste, 1 t. F. L. Succas<br>Kingston, 4,652 ps. Midgley & Co.<br>" 842 Gruning & Co.<br><b>Logwood</b><br>Laguna de Terminas, 466 t.<br>Belize, 350 t. Archer Bros. & Reid<br>" 35 Merchant Shippers' Co.                                                                                                                                       | <b>Tallow and Stearine</b><br>Boston, 4 tcs.<br><b>Tar</b> —<br>N. Orleans, 3 brls. Blundell, Spence & Co.<br><b>Tartar</b> —<br>Bordeaux, 14 cks.<br><b>Treacle</b> —<br>Philadelphia, 25 brls.<br>Amsterdam, 15 tcs.                                                                           | <b>Glue</b> —<br>Antwerp, 7 bls.<br>Rotterdam, 23 bgs.<br><b>Limestone</b> —<br>Antwerp, 2 cs. J. T. Fletcher & Co.<br>" 6 1 crte.                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Ultramarine</b> —<br>Holland, 6 cs. G. Rahn & Co.<br>" 1 4 cks. Philipps & Graves<br>Germany, 2 H. Lambert<br>Holland, 13 J. Barber & Co.<br>Belgium, 3 brls. W. Harrison & Co.<br>Holland, 1 cs.<br>" 1 ck. W. H. Carey & Sons<br>" 22 Hernu, Peron, & Co.                                                                                                                                                                                                                                                                                | <b>Madder</b><br>Rotterdam, 1 ck.<br><b>Valonia</b><br>Havre, 848 sks. Cunard S.S. Co., Ltd.<br><b>Farina</b> —<br>Stettin, 25 bgs. E. J. Arnitt<br>Copenhagen, 10<br><b>French Chalk</b> —<br>Rouen, 1 cs. W'sale Co.-op. Society, Ltd.<br><b>Glucose</b> —<br>Hamburg, 14 cks.                                                                                                                              | <b>Tallow and Stearine</b><br>Boston, 4 tcs.<br><b>Tar</b> —<br>N. Orleans, 3 brls. Blundell, Spence & Co.<br><b>Tartar</b> —<br>Bordeaux, 14 cks.<br><b>Treacle</b> —<br>Philadelphia, 25 brls.<br>Amsterdam, 15 tcs.                                                                           | <b>Lithopone</b> —<br>Rotterdam, 14 cks.<br><b>Paraffin Scale</b> —<br>New York, 900 brls. Anglo-American Oil Co.                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Yarnish</b> —<br>U. States, 17 pks. Allan Bros. & Co.<br>" 20 L. & I. D. Jt. Co.<br>Germany, 26 T. Palmer<br>" 5 L. & I. D. Jt. Co.<br>Belgium, 5 Wilson & Co.                                                                                                                                                                                                                                                                                                                                                                             | <b>Farina</b> —<br>Stettin, 25 bgs. E. J. Arnitt<br>Copenhagen, 10<br><b>French Chalk</b> —<br>Rouen, 1 cs. W'sale Co.-op. Society, Ltd.<br><b>Glucose</b> —<br>Hamburg, 14 cks.                                                                                                                                                                                                                              | <b>Tallow and Stearine</b><br>Boston, 4 tcs.<br><b>Tar</b> —<br>N. Orleans, 3 brls. Blundell, Spence & Co.<br><b>Tartar</b> —<br>Bordeaux, 14 cks.<br><b>Treacle</b> —<br>Philadelphia, 25 brls.<br>Amsterdam, 15 tcs.                                                                           | <b>Potash</b> —<br>Treport, 26 cks.<br><b>Potassium Bisulphate</b> —<br>Hamburg, 3 cks.<br><b>Pumice Stone</b> —<br>Messina, 40 bgs.<br><b>Rosin</b> —<br>New York, 25 brls.<br><b>Saltpetre</b> —<br>Hamburg, 25 cks.                                                                                                                                                                                                                                                                              |
| <b>Vermilion</b> —<br>Hong Kong, 5 bxs. L. & I. D. Jt. Co.<br>" 20 J. Swire & Sons<br><b>Waste Salt</b> —<br>Germany, 5 t. F. W. Berk & Co., Ltd.                                                                                                                                                                                                                                                                                                                                                                                             | <b>Farina</b> —<br>Stettin, 25 bgs. E. J. Arnitt<br>Copenhagen, 10<br><b>French Chalk</b> —<br>Rouen, 1 cs. W'sale Co.-op. Society, Ltd.<br><b>Glucose</b> —<br>Hamburg, 14 cks.                                                                                                                                                                                                                              | <b>Tallow and Stearine</b><br>Boston, 4 tcs.<br><b>Tar</b> —<br>N. Orleans, 3 brls. Blundell, Spence & Co.<br><b>Tartar</b> —<br>Bordeaux, 14 cks.<br><b>Treacle</b> —<br>Philadelphia, 25 brls.<br>Amsterdam, 15 tcs.                                                                           | <b>Glue</b> —<br>Antwerp, 7 bls.<br>Rotterdam, 23 bgs.<br><b>Limestone</b> —<br>Antwerp, 2 cs. J. T. Fletcher & Co.<br>" 6 1 crte.                                                                                                                                                                                                                                                                                                                                                                  |
| <b>White Lead</b> —<br>Belgium, 8 brls. J. L. Lyon & Co.<br>Germany, 18 cks. N. J. Fenner & Co.                                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>Farina</b> —<br>Stettin, 25 bgs. E. J. Arnitt<br>Copenhagen, 10<br><b>French Chalk</b> —<br>Rouen, 1 cs. W'sale Co.-op. Society, Ltd.<br><b>Glucose</b> —<br>Hamburg, 14 cks.                                                                                                                                                                                                                              | <b>Tallow and Stearine</b><br>Boston, 4 tcs.<br><b>Tar</b> —<br>N. Orleans, 3 brls. Blundell, Spence & Co.<br><b>Tartar</b> —<br>Bordeaux, 14 cks.<br><b>Treacle</b> —<br>Philadelphia, 25 brls.<br>Amsterdam, 15 tcs.                                                                           | <b>Glue</b> —<br>Antwerp, 7 bls.<br>Rotterdam, 23 bgs.<br><b>Limestone</b> —<br>Antwerp, 2 cs. J. T. Fletcher & Co.<br>" 6 1 crte.                                                                                                                                                                                                                                                                                                                                                                  |



dam, 14 cks.  
**Nitrate**—  
 dam, 13 cks.  
 —  
 dam, 175 cs.  
 rp, 84  
 urg, 113  
 ork, 1,998 bxs.  
 —  
 aux, 3 cks.  
**ic Acid**—  
 dam, 9 cks. 22 kgs.  
**Salt**—  
 urg, a qty.  
**Lead**—  
 dam, 9 cks.  
**Pulp**—  
 ania, 500 bls.  
 kshald, 1,000  
 2,840  
**ashes**—  
 urg, 8 cks.  
**xide**—  
 dam, 20 brls.  
**ulphate**—  
 rp, 2 cks.

**HULL.**

Week ending May 30th.

**Acid**—  
 dam, 17 blns. Hutchinson & Son  
 —  
 dam, 1 ck. W. & C. L. Ringrose  
**en**—  
 tersburg, 5 cs.  
 10  
**e Colours**—  
 dam, 1 cs. W. & C. L. Ringrose  
**ide Oil**—  
 dam, 1 ck. Hutchinson & Son  
**es**—  
 erp, 39 cks. Bailey & Leatham  
 174 H. F. Pudsey  
 dam, 22 Hutchinson & Son  
 22 W. & C. L. Ringrose  
 en, 42  
**ic Soda**—  
 erp, 15 dms. Wilson, Sons, & Co., Ld.  
**icals (otherwise undescribed)**  
 en, 2 cks. Veltmann & Co.  
 4 Wilson, Sons, & Co., Ld.  
 burg, 86 pks.  
**rs**—  
 burg, 2 cks. 1 cs. Wilson, Sons, & Co., Ld.  
 erp, 6 Bailey & Leatham  
 22 pks. 11 brls. Wilson, Sons, & Co., Ld.  
 erdam, 1 ck. Hutchinson & Son  
 in, 12 Wilson, Sons, & Co., Ld.  
 erdam, 5  
 en, 128 cs. W. R. Johnson & Son  
 te, 39 brls.  
 erdam, 8 cks. 37 W. & C. L. Ringrose  
 43 pks. 32 bxs. Ringrose  
 kirk, 11 cks. 3 cs. Wilson, Sons, & Co., Ld.  
 erdam, 15 1 cs.  
**ite**—  
 mhagen, 2 cks. Wilson, Sons, & Co., Ld.  
**uffs**—  
**izarine**  
 erdam, 17 brls. W. & C. L. Ringrose  
 46 pks. Ringrose  
 erdam, 46  
**tracts**  
 ste, 10 brls. Wilson, Sons, & Co., Ld.  
**arbolams**  
 bay, 15,327 bls.  
**umac**  
 ste, 30 bgs. Wilson, Sons, & Co., Ld.  
 rmo, 200  
 850

**Farina**—  
 Stettin, 596 bgs. Wilson, Sons, & Co., Ld.  
 Ghent, 250 cs. " " " " " "  
 Harlingen, 25 bgs. " " " " " "  
 Antwerp, 20 " " " " " "  
**Glucose**—  
 Stettin, 10 cks. 200 bgs. Wilson, Sons, & Co., Ld.  
 New York, 5 brls.  
**Glue**—  
 Hamburg, 76 bls. Wilson, Sons, & Co., Ld.  
 Bremen, 12 Veltmann & Co.  
 Rouen, 5 cks. Rawson & Robinson  
 Dunkirk, 25 Wilson, Sons, & Co., Ld.  
**Limestone**—  
 Antwerp, 2 cs. Hare & Co.  
**Naphthol**—  
 Rotterdam, 3 cks. W. & C. L. Ringrose  
**Paint**—  
 New York, 20 cs. Wilson, Sons, & Co., Ld.  
**Phosphate**—  
 Ghent, 1,020 bgs. Wilson, Sons, & Co., Ld.  
 Antwerp, 50 t.  
**Pitch**—  
 Hamburg, 30 cks.  
 Amsterdam, 13 Hutchinson & Son  
 26 W. & C. L. Ringrose  
**Potash**—  
 Antwerp, 8 dms. Wilson, Sons, & Co., Ld.  
 136  
**Pumice Stone**—  
 Messina, 94 pks. Wilson, Sons, & Co., Ld.  
**Saltpetre**—  
 Hamburg, 83 pks. Wilson, Sons, & Co., Ld.  
**Soap**—  
 Marseilles, 1 cs. Wilson, Sons, & Co., Ld.  
 New York, 500  
 Bari, 82  
 Molfetta, 300  
**Soda**—  
 Antwerp, 10 brls. Wilson, Sons, & Co., Ld.  
**Sodium Nitrate**—  
 Iquique, 15,490 bgs.  
**Starch**—  
 Antwerp, 34 cs. Bailey & Leatham  
 Amsterdam, 40 Hutchinson & Son  
 Rotterdam, 80 W. & C. L. Ringrose  
 Bremen, 2,706 Veltmann & Co.  
**Stearine**—  
 Antwerp, 13 pks. Wilson, Sons, & Co., Ld.  
 142 bgs.  
**Sulphur**—  
 Catania, 1,365 pks. Wilson, Sons, & Co., Ld.  
 1,210  
**Tallow**—  
 Boston, 663 tcs. Wilson, Sons, & Co., Ld.  
 St. Petersburg, 2 cks. Wilson, Sons, & Co., Ld.  
 Dunkirk, 8  
**Tartar**—  
 Bordeaux, 6 cks. Rawson & Robinson  
**Tartaric Acid**—  
 Bari, 60 cks. Wilson, Sons, & Co., Ld.  
**Treacle**—  
 Gothenburg, 1 brl. Wilson, Sons, & Co., Ld.  
 Boston, 600 " " " " " "  
**Turpentine**—  
 Trieste, 3 cs. Wilson, Sons, & Co., Ld.  
**Ultramarine**—  
 Rotterdam, 9 pks. Hutchinson & Son  
 " 2 cks. W. & C. L. Ringrose  
 Bremen, 24  
**Yarnish**—  
 New York, 7 brls. Wilson, Sons, & Co., Ld.  
 Antwerp, 1 cs. " " " " " "  
**Waste Salt**—  
 Hamburg, 508 bgs.

**White Lead**—  
 Antwerp, 11 cks. Bailey & Leatham  
 Amsterdam, 13 Hutchinson & Son  
 " 11 Davis & Son  
 " 13 Blundell,  
 " Spence, & Co.  
 27 A. Sanderson & Co.  
 Rotterdam, 17 Hutchinson & Son  
**Wood Pulp**—  
 Skien, 3,552 bls.  
**Zinc Oxide**—  
 Rotterdam, 25 cks. Hutchinson & Son

**GLASGOW.**

Week ending June 4th.

**Aniline**—  
 Rotterdam, 19 bxs. 6 brls. J. Rankine & Son  
**Aniline Dyes**  
 Antwerp, 49 cks. 4 cs.  
**Arachide Oil**—  
 Rotterdam, 1 ck. J. Rankine & Son  
**Barytes**—  
 Rotterdam, 107 pks.  
**Bone Meal**—  
 Bombay, 200 bgs.  
**Castor Oil**—  
 Marseilles, 353 brls. 5 cs.  
**Chemicals (otherwise undescribed)**  
 Rotterdam, 16 cks. J. Rankine & Son  
**Citric Acid**—  
 Messina, 14 cks.  
**Colours**—  
 Antwerp, 1 ck.  
 Rotterdam, 58 pks.  
**Cream of Tartar**—  
 Marseilles, 6 brls.  
**Dyestuffs**—  
**Alizarine**  
 Rotterdam, 29 brls. J. Rankine & Son  
 113 pks.  
**Indigo**  
 Rotterdam, 8 chts. J. Rankine & Son  
**Shumac**  
 Palermo, 60 bls. 1,050 bgs.  
**Glucose**—  
 New York, 199 brls.  
**Glue**—  
 Genoa, 20 bgs.  
 Rotterdam, 149 pks. J. Rankine & Son  
**Iron Oxide**—  
 Montreal, 52 brls.  
**Ochre**—  
 Marseilles, 21 brls.  
**Pitch**—  
 Amsterdam, 13 cks.  
**Plumbago**—  
 Genoa, 100 bgs.  
**Potash**—  
 Rotterdam, 53 cks. J. Rankine & Son  
 Hamburg, 60  
**Pumice Stone**—  
 Messina, 1 brl. 40 bgs.  
**Pyrites**—  
 Huelva, 2,210 t. Tharsis Co.  
**Soap**—  
 Marseilles, 30 cs.  
**Sodium Naphthol**—  
 Rotterdam, 5 brls. J. Rankine & Son  
**Starch**—  
 Ghent, 100 cs.  
 New York, 200 sks.  
 Rotterdam, 80 J. Rankine & Son  
**Sulphur**—  
 Catania, 14 cks. 905 bgs.  
**Talc**—  
 Genoa, 100 bgs.  
**Tallow**—  
 New York, 15 tcs.  
**Tartar**—  
 Bordeaux, 10 cks.  
**Waste Salt**—  
 Hamburg, 270 cks.  
**White Lead**—  
 Rotterdam, 53 cks. J. Rankine & Son  
 Antwerp, 3

**Whiting**—  
 Dieppe, 108 cks.  
**Wood Pulp**—  
 Gothenburg, 241 bls.  
 Christiania, 96 Alsing & Co., Ld.  
 " 1,330  
 Christiansand, 5,195  
**Zinc Ashes**—  
 Antwerp, 8 cks.  
**Zinc Oxide**—  
 Hamburg, 5 cks.  
 New York, 10 brls.  
**Zinc White**—  
 Rotterdam, 10 cks. J. Rankine & Son

**TYNE.**

Week ending May 30th.

**Barium Carbonate**—  
 Rotterdam, 134 bgs. Tyne S. S. Co.  
**Colours**—  
 Rotterdam, 1 bx. 1 brl. Tyne S. S. Co.  
 Hamburg, 1 cs. " "  
**Glue**—  
 Rotterdam, 6 cks. Tyne S. S. Co.  
 Hamburg, 1 20 bgs. " "  
**Limestone**—  
 Antwerp, 8 cs. Tyne S. S. Co.  
**Potash**—  
 Antwerp, 4 dms. Tyne S. S. Co.  
**Pyrites**—  
 Huelva, 1,996 t. Scott Bros.  
**Starch**—  
 Rotterdam, 190 cs. Tyne S. S. Co.  
 Antwerp, 20 " "  
**Tartaric Ac'd**—  
 Rotterdam, 24 cks. Tyne S. S. Co.  
**White Lead**—  
 Antwerp, 10 cks. Tyne S. S. Co.  
**Wood Pulp**—  
 Christiania, 250 bls.  
**Zinc Oxide**—  
 Rotterdam, 50 cks. Tyne S. S. Co.

**GOOLE.**

Week ending May 27th.

**Alizarine**—  
 Rotterdam, 18 brls.  
**Glucose**—  
 Rotterdam, 211 cks.  
**Caoutchouc**—  
 Boulogne, 4 cks.  
**Dyestuffs (otherwise undescribed)**  
 Rotterdam, 27 cs. 239 bls.  
 Boulogne, 2 cks. 26 10 pks.  
 Antwerp, 18 2  
**Fustic**—  
 Jamaica, 365 t.  
**Logwood**—  
 Belize, 232 t.  
 Hayti, 250  
 Campeachy, 450  
**Madder**—  
 Rotterdam, 1 ck.  
**Potash**—  
 Calais, 5 dms.  
**Saltpetre**—  
 Rotterdam, 100 bgs.  
**Sulphur Ore**—  
 Seville, 1,115 t.  
**Waste Salt**—  
 Hamburg, 240 t. 76 cks. 500 bgs.

**GRIMSBY.**

Week ending May 30th.

**Caoutchouc**—  
 Hamburg, 8 cs.  
 Antwerp, 2  
**Chemicals (otherwise undes.)**—  
 Rotterdam, 54 pks.  
 Hamburg, 5 cks.  
**Dyes**—  
 Antwerp, 78 pks. 38 cs.  
 Hamburg, 64  
**Waste Salt**—  
 Hamburg, 437 bgs.



# EXPORTS OF CHEMICAL PRODUCTS OF THE PRINCIPAL PORTS OF THE UNITED KINGDOM

| <b>LONDON.</b><br><i>Week ending June 3rd.</i> |                   |        |                                         |                           |              |
|------------------------------------------------|-------------------|--------|-----------------------------------------|---------------------------|--------------|
| <b>Acetic Acid—</b>                            |                   |        | Bombay,                                 | 3                         | 24           |
| Algoa Bay,                                     | 18 c.             | £12    | Trinidad,                               | 1 cs.                     | 2            |
| <b>Acids—</b>                                  |                   |        | Melbourne,                              | 20 kgs                    | 120          |
| Calcutta,                                      | 5 cs.             | £10    | Montreal,                               | 11                        | 62           |
| <b>Alkali—</b>                                 |                   |        | Dunedin,                                | 5                         | 31           |
| Sydney,                                        | 1 t. 8 c.         | £12    | Algoa Bay,                              | 1                         | 6            |
| Launceston,                                    | 4                 | 18     | Genoa,                                  | 23                        | 142          |
| Hobart,                                        | 6                 | 27     | Hamburg,                                | 12                        | 122          |
| Adelaide,                                      | 10                | 185    | Rotterdam,                              | 20                        | 124          |
| <b>Alumina Sulphate—</b>                       |                   |        | Brussels,                               | 2 cks.                    | 87           |
| Dunedin,                                       | 10 t. 13 c.       | £26    | <b>Coal Products—</b>                   |                           |              |
| <b>Ammonia—</b>                                |                   |        | <b>Alizarine</b>                        |                           |              |
| Auckland,                                      | pks.              | £13    | Boston,                                 | 10 cks. 7 pks.            | £210         |
| Melbourne,                                     | 10 c.             | £6     | St. Petersburg,                         | 6 cs.                     | 318          |
| <b>Ammonia (Liquid)—</b>                       |                   |        | <b>Aniline Dyes</b>                     |                           |              |
| Nordingen,                                     | 15 t. 9 c.        | £400   | Lyttleton,                              | 12 pks.                   | £68          |
| <b>Ammonium Carbonate—</b>                     |                   |        | Melbourne,                              | 1 cs.                     | 14           |
| New York,                                      | 16 t. 7 c.        | £420   | <b>Aniline Oil</b>                      |                           |              |
| Montreal,                                      | 3                 | 105    | Dunkirk,                                | 5 dms.                    | £175         |
| Calcutta,                                      | 5                 | 12     | New York,                               | 20                        | 720          |
| <b>Ammonium Chloride—</b>                      |                   |        | <b>Aniline Salts</b>                    |                           |              |
| Cologne,                                       | 9 cks.            | £67    | <b>Anthracene</b>                       |                           |              |
| Auckland,                                      | 1                 | 23     | Cologne,                                | 77 cks.                   | £723         |
| <b>Ammonium Sulphate—</b>                      |                   |        | Dusseldorf,                             | 86                        | 1,000        |
| Cullera,                                       | 141 t. 12 c.      | £1,180 | Rotterdam,                              | 53                        | 288          |
| Hamburg,                                       | 71                | 557    | <b>Benzine</b>                          |                           |              |
| Rotterdam,                                     | 70                | 253    | Penang,                                 | 1 cs.                     | £17          |
| St. Vincent,                                   | 502 bgs.          | 440    | Melbourne,                              | 12 crts.                  | 17           |
| Dunkirk,                                       | 15                | 4      | <b>Benzol</b>                           |                           |              |
| Antigua,                                       | 11                | 17     | Rotterdam,                              | 196 cks. 18 pps.          | £826         |
| Barbadoes,                                     | 51                | 1      | Amsterdam,                              | 142 16 pns. 26 dms. 1,347 |              |
| Las Palmas,                                    | 55                | 554    | Ghent,                                  | 32 32 brls.               | 200          |
| <b>Amorphous Phosphorus—</b>                   |                   |        | <b>Benzoline</b>                        |                           |              |
| E. London,                                     | 1 cs.             | £13    | Amsterdam,                              | 15 dms.                   | £180         |
| <b>Antimony—</b>                               |                   |        | <b>Binetro Benzol</b>                   |                           |              |
| Philadelphia,                                  | 18 c.             | £55    | Rotterdam,                              | 29 cks.                   | £300         |
| <b>Arsenic—</b>                                |                   |        | <b>Creosote Salts</b>                   |                           |              |
| Amsterdam,                                     | 6 cks.            | £29    | Cologne,                                | 2,101 bgs.                | £208         |
| Durban,                                        | 10 dms.           | 12     | <b>Dyes</b>                             |                           |              |
| Rockhampton,                                   | 1ft.              | 24     | Calcutta,                               | 2 cs.                     | £84          |
| <b>Barium Chlorate—</b>                        |                   |        | <b>Naphtha</b>                          |                           |              |
| New York,                                      | 3 c.              | £14    | Melbourne,                              | 10 crts.                  | £25          |
| <b>Barium Nitrate—</b>                         |                   |        | <b>Naphthalene</b>                      |                           |              |
| New York,                                      | 3 t.              | £52    | Calcutta,                               | 12 cks.                   | £14          |
| <b>Bleaching Powder—</b>                       |                   |        | Pasages,                                | 30 bgs.                   | 18           |
| Montreal,                                      | 16 dms.           | £15    | New York,                               | 175                       | 190          |
| Dunedin,                                       | 3 t. 15 c.        | 23     | Le Treport,                             | 64 140 157 pks.           | 274          |
| <b>Borax—</b>                                  |                   |        | Adelaide,                               | 9                         | 30           |
| Durban,                                        | 1 t.              | £19    | Hamburg,                                | 6                         | 50           |
| Rockhampton,                                   | 2 10 c.           | 42     | <b>Pitch</b>                            |                           |              |
| Christchurch,                                  | 10                | 10     | B. Ayres,                               | 9 blocks                  | £8           |
| <b>Calcium Chloride—</b>                       |                   |        | Newport,                                | 200 cks.                  | 162          |
| Bombay,                                        | 3 t. 6 c.         | £10    | Rockhampton,                            | 4 brls.                   | 19           |
| <b>Camphor—</b>                                |                   |        | Hochfeld,                               | 160 t.                    | 248          |
| Wellington,                                    | 1 c.              | £12    | New York,                               | 500                       | 440 lbs. 358 |
| <b>Carbolic Acid—</b>                          |                   |        | Malta,                                  | 100                       | 45           |
| Cologne,                                       | 86 kks.           | £513   | Alexandria,                             | 200 brls.                 | 10           |
| Colombo, 6 cs.                                 | 50 dms.           | 30     | Boston,                                 | 250 300                   | 280          |
| Rotterdam,                                     | 48                | 226    | <b>Tar</b>                              |                           |              |
| <b>Carbonic Acid Gas—</b>                      |                   |        | Natal,                                  | 1,100 dms.                | £115         |
| Hamburg,                                       | 3 cs.             | £28    | New York,                               | 25 cks.                   | 34           |
| Melbourne,                                     | 7 pks.            | 20     | Mauritius,                              | 10 runlets                | 6            |
| <b>Caustic Soda—</b>                           |                   |        | Hamburg,                                | 248 brls.                 | 125          |
| Sydney,                                        | 5 c.              | £10    | <b>Tar Oil</b>                          |                           |              |
| Fremantle,                                     | 6                 | 10     | Gothenburg,                             | 15 runlets                | £12          |
| Lyttleton,                                     | 5 t. 7            | 38     | Boston,                                 | 30 cks.                   | 20           |
| Cape Town,                                     | 4                 | 5      | <b>Tar and Pitch</b>                    |                           |              |
| Hobart,                                        | 5 18              | 46     | Lyttleton,                              | 23 pks. 6 brls.           | £11          |
| Dunedin,                                       | 11 3              | 99     | <b>Toluol</b>                           |                           |              |
| Brisbane,                                      | 6                 | 6      | Amsterdam,                              | 50 cks.                   | £214         |
| Algoa Bay,                                     | 5                 | 8      | Rotterdam,                              | 95 runlets                | 316          |
| E. London,                                     | 3 15              | 72     | Hamburg,                                | 2 dms.                    | £7           |
| Los Angeles,                                   | 100               | 665    | <b>Coal Products (otherwise undes.)</b> |                           |              |
| Napier,                                        | 10                | 24     | <b>Copper Sulphate—</b>                 |                           |              |
| <b>Chemicals (otherwise undescribed)</b>       |                   |        | Naples,                                 | 6 t. 5 c.                 | £127         |
| Demerara,                                      | 2 cs.             | £16    | Genoa,                                  | 10                        | 188          |
| E. London,                                     | 15 pks.           | 14     | Rio de Janeiro,                         | 4                         | —            |
| Colombo,                                       | 1                 | 13     | Bordeaux,                               | 115 4                     | 2,199        |
| Hamburg,                                       | 1 kg. 16 t. 1 ck. | 730    | Hobart,                                 | 1                         | 21           |
| Perth,                                         | 14 pks.           | 31     | Batoum,                                 | 10 3                      | 176          |
| Copenhagen,                                    | 1 t. 3 c.         | 47     | Bourgas,                                | 13                        | 11           |
| Wellington,                                    | 11 6 pks. 35      | 72     | <b>Copperas—</b>                        |                           |              |
| Dunkirk,                                       | 6 2 40 cks. 475   | 583    | Gibraltar,                              | 5 t. 7 c.                 | £17          |
| Treport,                                       | 15 35             | 300    | Los Angeles,                            | 24 14                     | 50           |
| Cadiz,                                         | 4 pks.            | 26     | <b>Corrosive Sublimate—</b>             |                           |              |
| Brisbane,                                      | 49                | 197    | Amsterdam,                              | 1 cs.                     | £11          |
| Adelaide,                                      | 5                 | 16     | <b>Cream of Tartar—</b>                 |                           |              |
| Calcutta,                                      | 17                | 25     | Fremantle,                              | 12 c.                     | £58          |
| Rotterdam,                                     | 3 cs.             | 12     | Dunedin,                                | 15                        | 72           |
| Sydney,                                        | 150 bgs.          | 100    | Sydney,                                 | 2 cs. 5 t.                | 583          |
| <b>Citric Acid—</b>                            |                   |        | Townsville,                             | 2                         | 26           |
| Sydney,                                        | 1 t.              | £124   | Durban,                                 | 2                         | 19           |
| Wellington,                                    | 2 c.              | 13     | Rockhampton,                            | 3                         | 15           |

|                                |                 |       |                                |                       |          |
|--------------------------------|-----------------|-------|--------------------------------|-----------------------|----------|
| <b>Hydrofluoric Acid—</b>      |                 |       | Melbourne,                     | 2                     | 11       |
| E. London,                     | 4 cs.           | £20   | Gothenburg,                    | 2 10                  | 21       |
| <b>Hyposulphate of Lime—</b>   |                 |       | Fremantle,                     | 2 10                  | 11       |
| New York,                      | 4 c.            | £62   | <b>Sulphur Dioxide—</b>        |                       |          |
| <b>Manure—</b>                 |                 |       | Maryboro,                      | 2 cs.                 | £11      |
| Townsville,                    | 5 t. 3 c.       | £0    | <b>Sulphuric Acid—</b>         |                       |          |
| Brisbane,                      | 18 15           | 150   | Barbadoes,                     | 2 t. 10 c.            | £21      |
| Nantes,                        | 86 6            | 550   | Singapore,                     | 3 10                  | 24       |
| Paris,                         | 50              | 170   | Penang,                        | 5 10                  | 21       |
| Cullera,                       | 438 8           | 2,015 | Natal,                         | 19                    | 39       |
| Malaga,                        | 7 8             | 70    | <b>Tartaric Acid—</b>          |                       |          |
| Colombo,                       | 10              | 60    | Oporto,                        | 5 cks.                | £28      |
| Natal,                         | 65              | 860   | Dunedin,                       | 10 c.                 | 62       |
| Antigua,                       | 9               | 94    | Christchurch,                  | 10                    | 67       |
| Bordeaux,                      | 30              | 250   | Riga,                          | 3                     | 22       |
| Madras,                        | 15              | 137   | Delagoa Bay,                   | 4                     | 28       |
| Barbadoes,                     | 220 12          | 1,726 | Sydney,                        | 5 t. 10               | 694      |
| <b>Nitric Acid—</b>            |                 |       | Lyttleton,                     | 5                     | 12       |
| Melbourne,                     | 6 cs.           | £15   | Melbourne,                     | 45 kgs.               | 122      |
| <b>Phosphorus—</b>             |                 |       | Yokohama,                      | 15                    | 94       |
| Melbourne,                     | 3 c.            | £3    | <b>LIVERPOOL.</b>              |                       |          |
| Dunedin,                       | 23 cs.          | 222   | <i>Period ending June 3rd.</i> |                       |          |
| Havre,                         | 3               | 66    | <b>Acids—</b>                  |                       |          |
| Wellington,                    | 8               | 49    | Port Natal,                    | 1 t. 4 c. 1 q.        | £42      |
| <b>Potash Crystals—</b>        |                 |       | <b>Albumen—</b>                |                       |          |
| San Francisco,                 | 3 cs.           | £55   | Boston,                        | 10 c.                 | £35      |
| <b>Potassium Bichromate—</b>   |                 |       | <b>Alkali—</b>                 |                       |          |
| Rio de Janeiro,                | 6 c.            | —     | Melbourne,                     | 4 cks.                | —        |
| <b>Potassium Chlorate—</b>     |                 |       | <b>Alum—</b>                   |                       |          |
| E. London,                     | 10 kgs.         | £20   | Para,                          | 1 t.                  | £5       |
| Santos,                        | 10 c.           | 20    | Melbourne,                     | 3 1 c.                | 19       |
| <b>Potassium Cyanide—</b>      |                 |       | Bourgas,                       | 5 14                  | 2 q. 27  |
| Cleveland Bay,                 | 9 t. 4 c.       | £888  | <b>Alumina Sulphate—</b>       |                       |          |
| Madras,                        | 6 1             | 397   | Montreal,                      | 9 t. 18 c. 1 q.       | £45      |
| Shanghai,                      | 8               | 50    | <b>Ammonium Carbonate—</b>     |                       |          |
| Sydney,                        | 10              | 70    | Melbourne,                     | 1 t.                  | £27      |
| <b>Potassium Hyposulphite—</b> |                 |       | Barcelona,                     | 1                     | 28       |
| New York,                      | 2 c.            | £31   | Verice,                        | 1                     | 39       |
| <b>Potassium Prussiate—</b>    |                 |       | Santander,                     | 2                     | 2 q. 28  |
| Montreal,                      | 11 cks. 1 m. 10 | £203  | Genoa,                         | 3 13 c. 2             | 125      |
| <b>Salicylic Acid—</b>         |                 |       | M. Video,                      | 2                     | 3        |
| Brisbane,                      | 1 c.            | £14   | <b>Ammonium Chloride—</b>      |                       |          |
| <b>Salt Cake—</b>              |                 |       | Boston,                        | 5 t.                  | £159     |
| Terneuzen,                     | 200 t. 2 c.     | £212  | Gothenburg,                    | 13 c.                 | 19       |
| <b>Saltpetre—</b>              |                 |       | Rotterdam,                     | 5 3                   | 74       |
| Coruna,                        | 3 t. 4 c.       | £70   | Calcutta,                      | 1 10                  | 13       |
| New York,                      | 1               | 23    | Smyna,                         | 2 7                   | 87       |
| Rio de Janeiro,                | 4 5             | 93    | Beyrout,                       | 1 brl.                | 6        |
| Gothenburg,                    | 1               | 21    | Patras,                        | 8                     | 23       |
| <b>Sheep Dip—</b>              |                 |       | <b>Ammonium Sulphate—</b>      |                       |          |
| Cape Town,                     | 300 dms.        | £50   | Bilbao,                        | 20 t. 7 c.            | £160     |
| Timaru,                        | 50              | 60    | Barbadoes,                     | 50 13                 | 2 q. 410 |
| San Francisco,                 | 300 cs.         | 600   | Crthagena (Spn.),              | 10                    | 10       |
| Natal,                         | 6 t. 1 c.       | 194   | Gd. Canary,                    | 9 10                  | 78       |
| B. Ayres, 100 bgs. 51          | 25 cs.          | 1,250 | Odessa,                        | 307 7                 | 1,520    |
| <b>Soda—</b>                   |                 |       | San Francisco,                 | 5                     | 40       |
| Algoa Bay,                     | 18 c.           | £5    | Leghorn,                       | 30 10                 | 210      |
| <b>Soda Alkali—</b>            |                 |       | Valencia,                      | 156 5                 | 1,274    |
| Rotterdam,                     | 5 t.            | £30   | Palermo,                       | 4 10                  | 24       |
| <b>Soda Ash—</b>               |                 |       | Philadelphia,                  | 19 17                 | 170      |
| Auckland,                      | 20 t. 2 c.      | £83   | Rotterdam,                     | 11                    | 19       |
| Oamaru,                        | 1 2             | 8     | New York,                      | 30 10                 | 275      |
| <b>Soda Crystals—</b>          |                 |       | <b>Arsenic—</b>                |                       |          |
| Cape Town,                     | 2 t.            | £5    | B. Ayres,                      | 18 t. 4 c.            | £41      |
| Natal,                         | 4               | 10    | <b>Bleaching Powder—</b>       |                       |          |
| <b>Sodium—</b>                 |                 |       | Alexandria,                    | 3 cks. 10 brls. 1 cs. | —        |
| New York,                      | 7 t. 7 c.       | £981  | Alicante,                      | 28                    | —        |
| <b>Sodium Bicarbonate—</b>     |                 |       | Ancona,                        | 21                    | —        |
| Lihau,                         | 9 c.            | £4    | Baltimore,                     | 355                   | —        |
| Rockhampton,                   | 2 t.            | 15    | Boston,                        | 983                   | —        |
| Massowah,                      | 2               | 15    | Dunkirk,                       | 19                    | —        |
| <b>Sodium Bisulphite—</b>      |                 |       | Genoa,                         | 85                    | —        |
| Philadelphia,                  | 1 c.            | £5    | Ghent,                         | 28                    | —        |
| <b>Sodium Carbonate—</b>       |                 |       | Havana,                        | 25                    | —        |
| E. London,                     | 10 c.           | £16   | Lisbon,                        | 40                    | —        |
| <b>Sodium Hyposulphite—</b>    |                 |       | Malaga,                        | 8                     | —        |
| New York,                      | 4 c.            | £62   | Naples,                        | 64 15                 | —        |
| <b>Sodium Silicate—</b>        |                 |       | Newport News,                  | 107                   | —        |
| Hobart,                        | 6 t. 7 c.       | £33   | New York,                      | 358 70                | —        |
| <b>Sodium Salicylate—</b>      |                 |       | Oporto,                        | 8                     | —        |
| Adelaide,                      | 2 cs.           | £10   | Paris,                         | 17                    | —        |
| <b>Sodium Sulphite—</b>        |                 |       | Portland, M.,                  | 60                    | —        |
| Ghent,                         | 40 t.           | £90   | Seville,                       | 23                    | —        |
| Belgium,                       | 50              | 75    | Tampico,                       | 133                   | —        |
| <b>Sodium Tartrate—</b>        |                 |       | Toronto,                       | 18                    | —        |
| Mauritius,                     | 1 c.            | £6    | <b>Boric Acid—</b>             |                       |          |
| <b>Strontium Carbonate—</b>    |                 |       | Melbourne,                     | 10 c.                 | £28      |
| New York,                      | 2 t. 10 c.      | £80   | Barcelona,                     | 1 2 q. 8              | —        |
| <b>Strontium Nitrate—</b>      |                 |       | Sydney,                        | 10                    | 17       |
| New York,                      | 9 t. 3 c.       | £217  | Antwerp,                       | 1 t. 17 3             | 42       |
| <b>Sulphur—</b>                |                 |       | <b>Borax—</b>                  |                       |          |
| Cape Town,                     | 13 t. 7 c.      | £144  | Coquimbo,                      | 5 c.                  | —        |
| Natal,                         | 10              | 6     | Peterbro, Ont.,                | 7 t. 4                | —        |



|                                                 |                  |          |
|-------------------------------------------------|------------------|----------|
| <b>Iquique</b>                                  | 9                | 10       |
| <b>Antwerp</b>                                  | 8                | 161      |
| <b>Sydney</b>                                   | 1                | 19       |
| <b>Danzig</b>                                   | 6                | 130      |
| <b>Calcium</b>                                  |                  |          |
| Havre, 4 t. 2 c.                                | £16              |          |
| <b>Calcium Chloride</b>                         |                  |          |
| Havre, 3 t. 19 c.                               | £9               |          |
| Boston, 2                                       | 10               |          |
| <b>Carbolic Acid</b>                            |                  |          |
| New York, 9 t. 13 c.                            | £576             |          |
| Lisbon, 2                                       | 8                |          |
| Hamburg, 8                                      | 23               |          |
| Alexandria, 20 brls.                            | 40               |          |
| Rotterdam, 27                                   | 4                | 1,375    |
| M. Video, 4                                     | 19               |          |
| Montreal, 4                                     | 12               |          |
| Rouen, 10                                       | 3                | 135      |
| <b>Sodium Soda</b>                              |                  |          |
| Acapulco, 70 dms.                               |                  |          |
| Aelaide, 15                                     | 20 cs.           |          |
| Alexandria, 46                                  |                  |          |
| Alcantara, 25                                   |                  |          |
| Amsterdam, 25                                   | 5 brls.          |          |
| Ancona, 55                                      |                  |          |
| Antwerp, 30                                     | 3 cks.           |          |
| Auckland, 30                                    |                  |          |
| Bahia, 85                                       |                  |          |
| Baltimore, 540                                  |                  |          |
| Barcelona, 280                                  | 300              | 40 pks.  |
| Bari, 35                                        |                  |          |
| Bombay, 90                                      |                  |          |
| Bordeaux, 250                                   |                  |          |
| Boston, 125                                     | 120              | 50 brls. |
| Bremen, 6                                       | 5                |          |
| B. Ayres, 6                                     | 8                |          |
| Cadiz, 8                                        |                  |          |
| Callao, 8                                       |                  |          |
| Cape Town, 8                                    |                  |          |
| Cera, 250                                       |                  |          |
| Dunkirk, 35                                     |                  |          |
| Galatz, 220                                     |                  |          |
| Genoa, 528                                      |                  |          |
| Halifax, 20                                     |                  |          |
| Hamburg, 20                                     | 20 kgs. 14 pks.  |          |
| Havana, 40                                      |                  |          |
| Havre, 20                                       |                  |          |
| Hrail, 35                                       |                  |          |
| Hong Kong, 35                                   |                  |          |
| Karrachee, 26                                   |                  |          |
| Leghorn, 35                                     |                  |          |
| La Guayra, 20                                   |                  |          |
| Leghorn, 68                                     |                  |          |
| Lisbon, 45                                      |                  |          |
| Malaga, 100                                     | 16 brls. 20      |          |
| Maracaibo, 94                                   |                  |          |
| Maracaibo, 94                                   |                  |          |
| Mauritius, 10                                   |                  |          |
| Melbourne, 123                                  | 50               |          |
| Messina, 20                                     |                  |          |
| Mollendo, 20                                    |                  |          |
| M. Video, 100                                   |                  |          |
| Montreal, 60                                    |                  |          |
| Naples, 87                                      |                  |          |
| N. Orleans, 35                                  |                  |          |
| New York, 725                                   | 10 cks. 15 brls. |          |
| Oporto, 15                                      |                  |          |
| Para, 70                                        | 22               |          |
| Parnahyba, 30                                   |                  |          |
| Paris, 52                                       |                  |          |
| Philadelphia, 120                               |                  |          |
| Pimental, 38                                    |                  |          |
| Pt. Elimbeth, 20                                |                  |          |
| Port Natal, 4                                   |                  |          |
| Puerto Cabello, 10                              |                  |          |
| Quebec, 30                                      |                  |          |
| Rangoon, 15                                     |                  |          |
| Riga, 20                                        |                  |          |
| Rotterdam, 99                                   |                  |          |
| Salaverry, 11                                   |                  |          |
| Samarang, 25                                    | 15 tons.         |          |
| San Francisco, 42                               |                  |          |
| San Sebastian, 42                               |                  |          |
| Seville, 335                                    |                  |          |
| Shanghai, 51                                    |                  |          |
| Singapore, 30                                   |                  |          |
| Smyrna, 29                                      |                  |          |
| Stettin, 15                                     |                  |          |
| Sydney, 24                                      |                  |          |
| Tarragona, 8                                    | 30               |          |
| Trieste, 18                                     |                  |          |
| Venice, 15                                      |                  |          |
| Vera Cruz, 15                                   |                  |          |
| Wellington, 0                                   | brls.            |          |
| <b>Chemical Salts (otherwise unabbreviated)</b> |                  |          |
| Savona, 1 t. 15 c. 3 q.                         | £65              |          |
| Fulmar, 1                                       | 8                |          |
| Oporto, 1                                       | 14               |          |
| Odessa, 91                                      | 14               | 150      |
| Alexandria, 1                                   | 4                | 42       |
| Karrachee, 1                                    | 4                | 42       |
| Calcutta, 18                                    | 18               | 2        |
| Philadelphia, 13                                | 13               | 450      |
| <b>China Clay</b>                               |                  |          |
| Barcelona, 22                                   | cks.             |          |

|                                                |        |          |
|------------------------------------------------|--------|----------|
| <b>Bombay</b>                                  | 853    |          |
| <b>Boston</b>                                  | 756 t. | 2,392    |
| <b>Calcutta</b>                                | 25     | 5 c.     |
| <b>Montreal, 128 bgs.</b>                      |        |          |
| <b>Pernambuco</b>                              | 20     | 25       |
| <b>Rio de Janeiro</b>                          | 14     | 10       |
| <b>Smyrna</b>                                  | 50     | 200      |
| <b>Coal Products</b>                           |        |          |
| Aniline Colours                                |        |          |
| Bombay, 6 cs.                                  |        |          |
| Santos, 2 kgs.                                 |        |          |
| Aniline Dyes                                   |        |          |
| Boston, 2 cs.                                  |        |          |
| Aniline Oil                                    |        |          |
| Boston, 10 dms.                                |        |          |
| Aniline Salt                                   |        |          |
| Boston, 86 cks. 20 cs.                         |        |          |
| Genoa, 17                                      |        |          |
| Lisbon, 1                                      |        |          |
| New York, 27                                   | 40     |          |
| Philadelphia, 12                               | 18     |          |
| Piraeus, 20                                    |        |          |
| Creosote Oil                                   |        |          |
| Lisbon, 150 brls.                              |        |          |
| Naphthalene                                    |        |          |
| Riga, 137 bgs.                                 |        |          |
| Pitch                                          |        |          |
| Galatz, 70 brls.                               |        |          |
| Tar                                            |        |          |
| Accra, 20 brls.                                |        |          |
| Antwerp, 6                                     |        |          |
| Bakana, 3                                      |        |          |
| Galatz, 165                                    |        |          |
| Gibraltar, 6                                   |        |          |
| Hilo, 50                                       |        |          |
| Manila, 100                                    |        |          |
| Philadelphia, 32 t.                            |        |          |
| Santander, 2 cks.                              |        |          |
| <b>Coal Products (otherwise unabbreviated)</b> |        |          |
| New York, 54 cks.                              |        |          |
| Shanghai, 60 cs.                               |        |          |
| <b>Cobalt Oxide</b>                            |        |          |
| Nagasaki, 10 c.                                | £270   |          |
| <b>Copper Sulphate</b>                         |        |          |
| Montreal, 2 t.                                 | £26    |          |
| Algiers, 12                                    | 4 c.   | 211      |
| Tarragona, 10                                  | 2      | 172      |
| Lisbon, 9                                      | 19     | 2 q. 158 |
| M. Video, 5                                    | 19     | 3        |
| Beyrout, 5                                     | 2      | 5        |
| Genoa, 225                                     | 18     | 1,383    |
| Paris, 5                                       | 2      | 85       |
| Venice, 74                                     | 18     | 1,252    |
| Marseilles, 75                                 | 3      | 810      |
| Leghorn, 95                                    | 17     | 1,654    |
| Trieste, 7                                     | 18     | 1,131    |
| Bordeaux, 401                                  | 15     | 2        |
| Naples, 126                                    | 1      | 1,910    |
| Barcelona, 19                                  | 19     | 337      |
| Nantes, 4                                      | 18     | 0        |
| Galatz, 10                                     | 9      | 308      |
| Oporto, 17                                     | 9      |          |
| <b>Copperas</b>                                |        |          |
| Varna, 8 t. 5 t.                               | £18    |          |
| Santos, 5                                      | 12     |          |
| <b>Disinfectants</b>                           |        |          |
| Karrachee, 202 dms.                            | £95    |          |
| Calcutta, 8 t. 12 c. 1 q.                      | 181    |          |
| Valparaiso, 2                                  | 5      |          |
| New York, 19                                   | 2      | 15       |
| Alexandria, 8 kgs.                             |        | 10       |
| <b>Dried Blood</b>                             |        |          |
| Gd. Canary, 5 t.                               | £33    |          |
| <b>Farina</b>                                  |        |          |
| Arica, 4 brls.                                 |        |          |
| <b>French Chalk</b>                            |        |          |
| Bombay, 30 bgs.                                |        |          |
| <b>Gelatine</b>                                |        |          |
| Boston, 175 bxs.                               |        |          |
| New York, 100                                  |        |          |
| <b>Gypsum</b>                                  |        |          |
| New York, 36 t.                                | £116   |          |
| <b>Iron Oxide</b>                              |        |          |
| Montreal, 1 t. 1 c.                            | £5     |          |
| Ottawa, 4                                      | 17     | 1 q. 24  |
| <b>Lime</b>                                    |        |          |
| Port Natal, 55 t. 16 c.                        | £78    |          |
| Accra, 20 brls.                                |        |          |
| <b>Litharge</b>                                |        |          |
| Philadelphia, 20 cks.                          |        |          |
| <b>Magnesia</b>                                |        |          |
| Montreal, 10 cs.                               |        |          |
| <b>Magnesium Chloride</b>                      |        |          |
| Ferrol, 1 t. 8 c.                              | £5     |          |
| <b>Magnesium Sulphate</b>                      |        |          |
| Alexandria, 40 kgs.                            |        |          |
| Arica, 2                                       |        |          |
| Bahia, 10 brls.                                |        |          |
| Hamburg, 8 cs.                                 |        |          |
| Santos, 50                                     |        |          |
| Toronto, 3 t. 11 c.                            |        |          |
| <b>Manganese Borate</b>                        |        |          |
| St. Petersburg, 10 c.                          | £28    |          |

|                                 |                 |         |
|---------------------------------|-----------------|---------|
| <b>Manganese Sulphate</b>       |                 |         |
| St. Petersburg, 2 t. 19 c. 1 q. | £56             |         |
| <b>Manure</b>                   |                 |         |
| Philadelphia, 15 t.             | £60             |         |
| Havre, 80                       | 2 c.            | 220     |
| <b>Muriatic Acid</b>            |                 |         |
| Pernambuco, 1 t. 2 c.           | £13             |         |
| <b>Ochre</b>                    |                 |         |
| Delagoa Bay, 55 cks.            |                 |         |
| Genoa, 30                       |                 |         |
| Leghorn, 30                     |                 |         |
| <b>Oxalic Acid</b>              |                 |         |
| Boston, 6 t. 9 c. 1 q.          | £206            |         |
| <b>Paint</b>                    |                 |         |
| Abonema, 5 pks.                 |                 |         |
| Accra, 1 ck.                    |                 |         |
| Alexandria, 3 brls.             | 346 tins 7 dms. |         |
| Amsterdam, 6                    | 6 kgs 4         |         |
| Antwerp, 6                      | 38              |         |
| Bahia, 6 cs.                    | 15              | 6       |
| B'ranquilla, 19                 |                 |         |
| Bilbao, 3                       | 15              | 60      |
| Bombay, 3                       |                 |         |
| Bordeaux, 100                   | 179             | 80      |
| B. Ayres, 100                   | 179             | 80      |
| Calcutta, 2                     |                 |         |
| Cameroon, 5                     |                 |         |
| Canea, 3                        | 68              | 1 c.    |
| Constantinople, 3               |                 |         |
| Curacao, 70                     |                 |         |
| Degama, 19                      | 32              | 60 dms  |
| Gibraltar, 19                   |                 |         |
| Gd. Canary, 3                   |                 |         |
| Grand Lahou, 3                  |                 |         |
| Havana, 3                       |                 |         |
| Ibrail, 11                      |                 |         |
| Hong Kong, 40                   |                 |         |
| La Guayra, 5                    |                 |         |
| Loango, 1                       |                 |         |
| Manao, 5                        |                 |         |
| Manila, 1,125                   |                 |         |
| Marseilles, 13                  |                 |         |
| McLennan, 12 cs.                |                 |         |
| New York, 5                     |                 |         |
| Pernambuco, 7                   | 48              |         |
| Ponca, 60                       |                 |         |
| Rangoon, 8 tins                 | 4               |         |
| St. John's Nfld., 4             | 153             |         |
| San Francisco, 4                |                 |         |
| San Juan, 2                     | 167             |         |
| Santos, 9                       |                 |         |
| Sherbrooke, 33                  | 45              |         |
| Sierra Leone, 40                | 24              |         |
| Sourabaya, 102                  |                 |         |
| Talcabano, 7                    | 5               |         |
| Tampico, 1 cs.                  | 25              |         |
| Tripoli, 12                     |                 |         |
| Valpa aiso, 12                  |                 |         |
| <b>Painters Colours</b>         |                 |         |
| Alexandria, 110 tins            |                 |         |
| Bilbao, 20 cks.                 |                 |         |
| Bombay, 38 cs.                  | 266 kgs.        |         |
| Bremen, 100 bgs.                |                 |         |
| B. Ayres, 20                    | 200             |         |
| Cabello, 6                      | 31 bls.         |         |
| Calcutta, 9                     | 25              | 20 dms. |
| Cape Coast, 08                  |                 |         |
| Colombo, 1 t. 1 c.              | 4               |         |
| Constantinople, 0 cs.           |                 |         |
| Genoa, 6 cks.                   |                 |         |
| Gijon, 1 cs.                    |                 |         |
| Gothenburg, 100 bgs.            |                 |         |
| Guernsey, 5 brls.               | 11 kgs. 12 dms. |         |
| Hamburg, 130 bgs.               |                 |         |
| Havre, 7                        |                 |         |
| Iquique, 25                     | 100             |         |
| Leghorn, 6 cs.                  |                 |         |
| Limassol, 4                     |                 |         |
| Lisbon, 30                      | 38              |         |
| Manao, 21                       | 200             |         |
| Manila, 2                       |                 |         |
| Mayaguez, 2                     | 4               |         |
| M. Video, 58                    | 44              |         |
| Montreal, 51                    | 64              | 43      |
| Newport News, 91                |                 |         |
| N. York, 700 brls.              | 50              |         |
| Odessa, 34                      |                 |         |
| Oporto, 47                      | 50              |         |
| Para, 22                        | 1               | 12 t.s. |
| Pernambuco, 51                  |                 |         |
| Porto Alegre, 35 brls.          |                 |         |
| San Juan, 4                     |                 |         |
| Santander, 30                   |                 |         |
| Trieste, 100 bgs.               |                 |         |
| Valparaiso, 16 cs.              |                 |         |
| Yokohama, 8                     |                 |         |
| <b>Paraffin Scale</b>           |                 |         |
| Batoum, 49 cks.                 |                 |         |
| Cephalonia, 8 bgs.              |                 |         |
| <b>Paraffin Wax</b>             |                 |         |
| Alexandria, 2 cs.               |                 |         |
| Genoa, 5 bgs.                   |                 |         |

|                              |         |       |          |
|------------------------------|---------|-------|----------|
| <b>Phosphorus—</b>           |         |       |          |
| Yokohama,                    | 10 cs.  |       | £125     |
| Hiogo,                       | 35      |       | 439      |
| B. Ayres,                    |         | 14 c. | 2 q. 110 |
| Kobe,                        | 10      |       | 125      |
| <b>Picric Acid —</b>         |         |       |          |
| New York,                    |         | 18 c. | £68      |
| <b>Plumbago—</b>             |         |       |          |
| E. London,                   | 1 ck.   |       |          |
| <b>Potash—</b>               |         |       |          |
| Bombay,                      |         | 8 c.  | £11      |
| <b>Potash Salts—</b>         |         |       |          |
| Genoa,                       | 4 brls. |       | £15      |
| <b>Potassium Bichromate—</b> |         |       |          |
| Pirmus,                      | 1 t.    | 17 c. | 3 q. £80 |
| Vera Cruz,                   |         | 8     | 17       |
| <b>Potassium Carbonate—</b>  |         |       |          |
| Bombay,                      |         | 9 c.  | £10      |
| <b>Potassium Chlorate—</b>   |         |       |          |
| Gutujewsky,                  | 4 t.    | 1 c.  | £162     |
| Kunigsberg,                  | 1       | 15    | 71       |
| Gothenburg,                  | 4       |       | 160      |
| Stettin,                     | 10      |       | 395      |
| New York,                    | 44      |       | 1,704    |
| Santos,                      |         | 19    | 40       |
| Shanghai,                    | 7       | 10    | 291      |
| Genoa,                       | 1       |       | 39       |
| <b>Potassium Prussiate—</b>  |         |       |          |
| Genoa,                       |         | 18 c. | £62      |
| Barcelona,                   | 2 t.    | 15    | 175      |
| <b>Potassium Silicate—</b>   |         |       |          |
| Amsterdam,                   | 1 t.    | 4 c.  | 3 q. £10 |
| <b>Salt —</b>                |         |       |          |
| Accra,                       | 16 t.   | 5 c.  |          |
| Adelaide,                    | 16      |       |          |
| Algoa Bay,                   | 22      | 17    |          |
| Ambrizette,                  | 7       | 10    |          |
| Anamaboe,                    | 18      | 15    |          |
| Archangel,                   | 420     |       |          |
| Antwerp,                     | 141     | 18    |          |
| Axim,                        |         |       | 32 brls. |
| Bata,                        | 8       |       |          |
| Bakana,                      | 20      |       |          |
| Baltimore,                   | 147     |       |          |
| Barbadoes,                   | 100     |       |          |
| Benin,                       | 21      | 5     |          |
| Boston,                      | 622     | 9     |          |
| B. Ayres,                    | 40      | 4     |          |
| Calcutta,                    | 6,640   | 1     |          |
| Cameroon,                    | 30      |       |          |
| Cape Town,                   | 300     |       |          |
| Copenhagen,                  | 1,701   |       |          |
| E. London,                   | 8       | 19    |          |
| Egwanga,                     | 80      | 3     |          |
| Frica,                       | 20      |       |          |
| Ghent,                       | 50      |       |          |
| Gibraltar,                   | 1       | 18    |          |
| Guernsey,                    | 3       | 6     |          |
| Halifax,                     | 1,020   |       |          |
| Isles De Les,                | 6       | 4     |          |
| Jersey,                      |         | 15    |          |
| Lagos,                       | 150     |       |          |
| Leydesford,                  | 121     |       |          |
| Landana,                     | 17      | 8     |          |
| Luca,                        | 8       | 13    |          |
| Mellbourne,                  | 180     |       |          |
| Monrovia,                    | 22      | 10    |          |
| M. Video,                    | 1       | 17    |          |
| Montreal,                    | 857     |       |          |
| Mussara,                     | 7       | 16    |          |
| N. Orleans,                  | 264     | 7     |          |
| New York,                    | 3,748   |       |          |
| Noqui,                       | 20      |       |          |
| North Kombi,                 | 9       |       |          |
| Old Calabar,                 | 31      |       |          |
| Para,                        | 75      |       |          |
| Pt. Natal,                   | 115     |       |          |
| Rangoon,                     | 20      |       |          |
| Rio de Janeiro,              | 41      |       |          |
| Rotterdam,                   | 100     |       |          |
| San Francisco,               | 217     |       |          |
| Sherbrooke,                  | 150     |       |          |
| Sierra Leone,                | 50      |       |          |
| Sydney,                      | 210     |       |          |
| Tumaco,                      | 18      |       |          |
| Valparaiso,                  | 10      |       |          |
| Victoria, E. C.,             | 253     |       |          |
| <b>Salt Cake—</b>            |         |       |          |
| Baltimore,                   | 50 t.   | 2 c.  | £65      |
| <b>Saltpetre—</b>            |         |       |          |
| Cartagena, N.G.,             | 6 t.    | 2 c.  | £140     |
| Cera,                        | 1       |       | 23       |
| <b>Sheep Dip—</b>            |         |       |          |
| Algoa Bay,                   | 6 t.    | 13 c. | £197     |
| Pt. Natal,                   | 5       | 1     | 2 q. 203 |
| B. Ayres,                    | 20      | 2     | 575      |
| <b>Soap—</b>                 |         |       |          |
| Addah,                       | 30 bxs. |       |          |
| Alexandria,                  | 85      | 4 cs. |          |
| Algoa Bay,                   | 2,450   | 5     | 18 bds.  |
| 360 kgs.                     |         |       |          |
| Amboina,                     | 500     |       |          |
| Amsterdam,                   | 300     | 6     |          |



|                             |                             |                                        |                                        |
|-----------------------------|-----------------------------|----------------------------------------|----------------------------------------|
| Antigua, 235                | Riga, 19                    | Trinidad, 10                           | Copperas—                              |
| Axin, 201                   | Rio de Janeiro, 50 brls. 50 | Venice, 8                              | Beirut, 8 brls.                        |
| Barbadoes, 1,502            | Rotterdam, 100 4 9          | <b>Sodium Sulphate—</b>                | Kaifa, 2                               |
| Barranquilla, 10            | San Francisco, 70           | Boston, 6 cks.                         | <b>Cottonseed Oil—</b>                 |
| Bombay, 2,930               | Smyrna, 150                 | Portland, O., 18                       | Tunis, 30 brls.                        |
| Brisbane, 1                 | Sydney, 3 tcs. 233          | Quebec, 30                             | <b>Dextrine—</b>                       |
| B. Ayres, 1                 | Sydney, 50 brls.            | <b>Stannous Chloride—</b>              | Barcelona, 85 bgs. 8 kgs               |
| Calcutta, 30                | Tacoma, 466                 | Pt. Natal, 6 c. 3 q. £20               | <b>Dyestuffs (otherwise undescr'd)</b> |
| Cape Coast, 325             | Wellington, 113             | <b>Sulphur—</b>                        | Rouen, 4 cks.                          |
| Cape Town, 3,035            | Yokohama, 200               | Philadelphia, 125 t. 2 c. £406         | <b>Farina—</b>                         |
| Christiania, 29             | <b>Soda Crystals—</b>       | Boston, 250 13 815                     | Christiania, 1 sk.                     |
| Constantinople, 10          | Alcalide, 50 brls.          | Halifax, 1 9 1 q. 10                   | <b>Glue—</b>                           |
| Coquimbo, 1                 | Calcutta, 20                | <b>Sulphuric Acid—</b>                 | Barcelona, 18 cks.                     |
| Curacao, 61                 | Cape Town, 40 kgs. 40       | Pernambuco, 5 c. £2                    | <b>Logwood—</b>                        |
| Delagoa Bay, 200            | Coquimbo, 20                | Pt. Natal, 3 cs. 9                     | Dieppe, 36 bgs.                        |
| Durban, 8 bdis.             | Freemantle, 67 pks.         | Porto Alegre, 19 1 q. 10               | <b>Mineral White—</b>                  |
| E. London, 3,080            | Montreal, 610 80 bgs. 75    | <b>Superphosphates—</b>                | Rio de Janeiro, 10 bgs.                |
| Freemantle, 12              | New York, 390               | Gd. Canary, 12 t. £45                  | <b>Oxygen—</b>                         |
| Galatz, 30                  | Oporto, 12                  | Cullera, 200 495                       | Trepot, 100 tubes                      |
| Genoa, 40                   | Philadelphia, 307           | Nantes, 100 3 q. 300                   | <b>Paint—</b>                          |
| Gibraltar, 350              | St. John's N'fd., 30        | <b>Turpentine—</b>                     | Bombay, 7 dms.                         |
| Guayaquil, 50               | <b>Sodium Bicarbonate—</b>  | Iloilo, 50 dms.                        | <b>Pitch—</b>                          |
| Half Jack, 50               | Adelaide, 100 kgs.          | Lagos, 10                              | Trepot, 50 t.                          |
| Havre, 20 1,525             | Alicante, 20 10 brls.       | Landana, 5                             | Antwerp, 356 3 c.                      |
| Hong Kong, 700              | Amsterdam, 40               | <b>Yarnish—</b>                        | <b>Potassium Prussiate—</b>            |
| Humacao, 50                 | Ancona, 70                  | Axim, 4 dms.                           | Valencia, 4 cks.                       |
| Kurrachee, 500 39           | Antwerp, 50 bgs.            | Barcelona, 2 brls.                     | <b>Soap—</b>                           |
| Jersey, 20 4 chts.          | Auckland, 40                | Bilbao, 1 cs.                          | Alexandria, 27 cs.                     |
| Madras, 300 20              | Barcelona, 125              | Bombay, 10 38 7 cks.                   | Barcelona, 1 kg.                       |
| Malta, 70                   | Bordeaux, 17                | Cape Coast, 12                         | Rotterdam, 1                           |
| Mosel Bay, 385              | Boston, 250                 | Cape Town, 3                           | <b>Soda—</b>                           |
| N. Calabar, 250             | Bremen, 4 cks.              | Galatz, 2                              | Rio de Janeiro, 3 bls.                 |
| N. Orleans, 300             | Cadiz, 18 pks. 16           | Genoa, 8                               | <b>Soda Ash—</b>                       |
| New York, 1,598             | Calcutta, 1,383             | Halifax, 1                             | Helsingfors, 100 cks.                  |
| Old Calabar, 551            | Callao, 50 10               | Hio, 20 4                              | Wiborg, 10                             |
| Opobo, 1,250                | Carril, 40                  | Lisbon, 1                              | <b>Sodium Arseniate—</b>               |
| Para, 800                   | Christiania, 60             | New York, 4                            | Bombay, 2 cks.                         |
| Ponce, 50                   | Constantinople, 60          | Odessa, 5                              | <b>Starch—</b>                         |
| Pt. Elizabeth, 500          | Copenhagen, 25              | Oporto, 1                              | Christiania, 5 sks.                    |
| Pt. Natal, 5,498            | Danzig, 20                  | Rio de Janeiro, 3                      | Gothenburg, 10 bgs.                    |
| Punta Arenas, 500 20        | Dunedin, 130                | Seville, 3                             | <b>Sulphuric Acid—</b>                 |
| Rangoon, 500                | E. London, 40               | Sourabaya, 60                          | Rio de Janeiro, 2 brls.                |
| Rio de Janeiro, 50 395      | Freemantle, 23 17           | <b>Vermillion—</b>                     | <b>Tallow—</b>                         |
| St. John's, 40              | Genoa, 100 10               | Boston, 1 cs.                          | Barcelona, 3 cks.                      |
| St. Lucia, 310              | Halifax, 100                | <b>White Lead—</b>                     | Rotterdam, 1                           |
| St. John's N'fd., 270 1     | Hamburg, 30 5 10 bgs.       | Bahia, 50 kgs.                         | <b>Tar Oil—</b>                        |
| Salt Pond, 830              | Hong Kong, 17               | Pt. Natal, 180                         | Antwerp, 3 dms.                        |
| San Jose De Guatemala, 100  | Ibrail, 20                  | Porto Alegre, 1 t.                     | Rotterdam, 23 cks.                     |
| San Juan, 375               | Jersey, 4 t.                | <b>Zinc Chloride—</b>                  | Hamburg, 15                            |
| Savanilla, 4                | Laghorn, 30 20              | Ferrol, 16 c. 3 q. £14 50              | <b>Tar Salts—</b>                      |
| Shanghai, 6,051 25          | Malta, 20                   | Bombay, 3 t. 8                         | Rotterdam, 56 cks.                     |
| Sierra Leone, 50            | Marseilles, 255 2           | <b>MANCHESTER.</b>                     | Hamburg, 49                            |
| Singapore, 1,133            | Melbourne, 20               | <i>Week ending June 4th.</i>           | <b>Toluol—</b>                         |
| Sinoe, 22                   | Montreal, 220 5 100 bxs.    | <b>Acids—</b>                          | Rotterdam, 75 brls.                    |
| Smyrna, 10                  | Naples, 90                  | Antwerp, 1 kg.                         | <b>Yarnish—</b>                        |
| Trinidad, 12                | N. Orleans, 75              | <b>Alum—</b>                           | Barcelona, 8 cks. 2 dms.               |
| Valparaiso, 322             | Newport News, 130           | Beyrout, 20 brls.                      | <b>Whiting—</b>                        |
| Vancouver, 4 kgs.           | New York, 250 10            | Kaifa, 10                              | Bombay, 62 cks.                        |
| Yokohama, 4                 | Paris, 560                  | Valencia, 12 cks.                      | <b>Zinc Chloride—</b>                  |
| Zanzibar, 25 bdis.          | Patras, 70                  | <b>Ammonium Carbonate—</b>             | Barcelona, 10 cks.                     |
| <b>Soapstone—</b>           | Pernambuco, 22              | Hamburg, 20 kgs.                       |                                        |
| Oporto, 2 t.                | Philadelphia, 50 102        | Antwerp, 25 cks.                       |                                        |
| <b>Soda Alkali—</b>         | Pt. Elizabeth, 25           | <b>Ammonium Sulphate—</b>              |                                        |
| Alicante, 35 brls.          | Rosario, 100 43             | Cullera, 1,282 bgs.                    |                                        |
| Barcelona, 120              | Santander, 60 2             | Hamburg, 487                           |                                        |
| Bombay, 15 kgs.             | Shanghai, 30                | Valencia, 4,462                        |                                        |
| Galatz, 40                  | Singapore, 40               | Barcelona, 254                         |                                        |
| Genoa, 35                   | Smyrna, 54 10 2 brls.       | <b>Aniline Colours—</b>                |                                        |
| Odessa, 100                 | Sourabaya, 45 5 10 bgs.     | Barcelona, 2 cks. 2 cs.                |                                        |
| Oporto, 40                  | Stettin, 400 10             | Rotterdam, 2 4 9 kgs.                  |                                        |
| Seville, 33                 | Sydney, 200                 | <b>Aniline Oil—</b>                    |                                        |
| <b>Soda Ash—</b>            | Tampico, 70                 | Barcelona, 10 brls.                    |                                        |
| Adelaide, 39 brls.          | Tarragona, 70               | Rotterdam, 1 dm. 1 tin                 |                                        |
| Antwerp, 227 bgs. 14 cks.   | Toronto, 10                 | Rouen, 4                               |                                        |
| Bahia, 20                   | Trinidad, 50                | Hamburg, 3                             |                                        |
| Baltimore, 2,910            | Valencia, 155 10            | <b>Aniline Salt—</b>                   |                                        |
| Barcelona, 40               | Wellington, 250 30          | Rotterdam, 1 ck. 3 pns.                |                                        |
| Bombay, 4 37                | Yokohama, 500               | Barcelona, 4                           |                                        |
| Boston, 2,805 100 72        | <b>Sodium Bichromate—</b>   | <b>Benzol—</b>                         |                                        |
| 385 tcs.                    | Lisbon, 3 cks.              | Rotterdam, 48 brls.                    |                                        |
| B. Ayres, 300 120           | <b>Sodium Carbonate—</b>    | <b>Bleaching Powder—</b>               |                                        |
| Calcutta, 131               | Boston, 56 brls.            | Rio de Janeiro, 6 brls.                |                                        |
| Callao, 100                 | Havana, 25 cks.             | <b>Carbolic Acid—</b>                  |                                        |
| Canea, 100                  | <b>Sodium Chlorate—</b>     | Trepot, 10 cks. 108 bdis.              |                                        |
| Copenhagen, 345             | Antwerp, 20 kgs.            | <b>Castor Oil—</b>                     |                                        |
| Dunedin, 58                 | Hamburg, 22                 | Barcelona, 1 ck.                       |                                        |
| E. London, 20 40 kgs.       | Rouen, 40                   | Tunis, 18 dms.                         |                                        |
| Freemantle, 20              | <b>Sodium Hyposulphite—</b> | Alexandria, 18                         |                                        |
| Genoa, 210                  | Santos, 20 brls.            | Rio de Janeiro, 8                      |                                        |
| Ghent, 250                  | Toronto, 20 kgs.            | <b>Chemicals (otherwise undescr'd)</b> |                                        |
| Gothenburg, 25 cks.         | <b>Sodium Silicate—</b>     | Beyrout, 20 cks. 20 bdis.              |                                        |
| Halifax, 14 tcs.            | Acapulco, 17 cks.           | <b>China Clay—</b>                     |                                        |
| Hamburg, 400                | Barcelona, 8                | Barcelona, 8 bgs.                      |                                        |
| Havana, 8                   | Bombay, 15 5 brls.          | <b>Colours—</b>                        |                                        |
| Hio, 75                     | Braia, 6                    | Hamburg, 16 cks. 1 cs. 22 kgs.         |                                        |
| Hong Kong, 38               | Calcutta, 13                | Rotterdam, 4                           |                                        |
| Lagos, 25                   | Corfu, 30                   |                                        |                                        |
| Madras, 12                  | Melbourne, 130              |                                        |                                        |
| Melbourne, 14               | Mexico City, 62             |                                        |                                        |
| M. Video, 25                | Monastico, 17               |                                        |                                        |
| Montreal, 80 161            | Salonica, 10                |                                        |                                        |
| 164 bxs. 23 tcs.            | Samarang, 10                |                                        |                                        |
| New York, 2,870 123 230     | Sydney, 10                  |                                        |                                        |
| Old Calabar, 10             |                             |                                        |                                        |
| Philadelphia, 5,776 175 185 |                             |                                        |                                        |



|                                     |       |                    |     |
|-------------------------------------|-------|--------------------|-----|
| ng,                                 | 11    | 6                  | 10  |
| theim,                              |       |                    | 5   |
| enburg,                             | 14    | 13                 |     |
| ingfors,                            | 3     | 6                  |     |
| go,                                 | 2     |                    |     |
| burg,                               | 260   | 7                  |     |
| e,                                  |       |                    | 1   |
| York,                               | 261   | 25                 | 67  |
| na,                                 | 5     |                    |     |
| achee,                              | 50    | 20                 | 135 |
| burg,                               | 5     | 80                 |     |
| in,                                 | 25    |                    | 5   |
| tholm,                              |       |                    | 10  |
| etersburg,                          | 11    | 4                  |     |
| te,                                 | 19    |                    | 9   |
| urg,                                |       |                    | 20  |
| <b>Need Oil—</b>                    |       |                    |     |
| erp,                                | 1,243 | c.                 |     |
| terdam,                             | 1,496 |                    |     |
| stania,                             | 47    |                    |     |
| enburg,                             | 298   |                    |     |
| burg,                               | 1,495 |                    |     |
| terdam,                             | 1,056 |                    |     |
| in,                                 | 17    |                    |     |
| tholm,                              | 393   |                    |     |
| <b>ote—</b>                         |       |                    |     |
| burg,                               | 12    | brls.              |     |
| e,                                  | 499   |                    |     |
| <b>uffs (otherwise undescribed)</b> |       |                    |     |
| on,                                 | 1     | kg.                |     |
| tantinople,                         | 2     | cs.                |     |
| —                                   |       |                    |     |
| York,                               | 39    | cks.               |     |
| <b>ed Oil—</b>                      |       |                    |     |
| erp,                                | 11    | c.                 |     |
| terdam,                             | 171   |                    |     |
| sund,                               | 18    |                    |     |
| eaux,                               | 35    |                    |     |
| en,                                 | 42    |                    |     |
| bay,                                | 175   |                    |     |
| stiansund,                          | 54    |                    |     |
| stania,                             | 651   |                    |     |
| stiansand,                          | 31    |                    |     |
| theim,                              | 256   |                    |     |
| burg,                               | 562   |                    |     |
| York,                               | 176   |                    |     |
| achee,                              | 14    |                    |     |
| terdam,                             | 100   |                    |     |
| anger,                              | 191   |                    |     |
| te,                                 | 25    |                    |     |
| <b>tha—</b>                         |       |                    |     |
| erp,                                | 8     | brls.              |     |
| —                                   |       |                    |     |
| terdam,                             | 20    | cks.               |     |
| —                                   |       |                    |     |
| bay,                                | 3     | cks.               |     |
| tholm,                              | 1     |                    |     |
| <b>ers' Colours—</b>                |       |                    |     |
| erp,                                | 63    | cks. 7 cs. 66 pks. |     |
| terdam,                             | 40    | dms.               |     |
| —                                   | 7     |                    |     |
| eaux,                               | 17    | 1                  |     |
| on,                                 | 26    |                    |     |
| en,                                 | 1     |                    |     |
| bay,                                | 5     | 144 312            |     |
| stania,                             | 5     | 22 dms. 156        |     |
| stiansand,                          | 2     | 30                 |     |
| rig,                                | 7     | 2                  |     |
| theim,                              | 2     | 20                 |     |
| ie,                                 | 4     |                    |     |
| it,                                 | 12    |                    |     |
| enburg,                             | 1     |                    |     |
| ingfors,                            | 210   |                    |     |
| iburg,                              | 22    |                    |     |
| ry,                                 | 1     | 5                  |     |
| koping,                             | 2     | 1                  |     |
| York,                               | 295   | 60                 |     |
| sa,                                 | 398   |                    |     |
| en,                                 | 9     | 2                  |     |
| terdam,                             | 1     | 5                  |     |
| in,                                 | 8     | 100 t.             |     |
| tholm,                              | 19    | 1 cs.              |     |
| etersburg,                          |       | 299                |     |
| urg,                                | 1     |                    |     |
| —                                   |       |                    |     |
| erp,                                | 276   | l.                 |     |
| kirk,                               | 78    |                    |     |
| it,                                 | 8     | cks.               |     |
| en,                                 | 12    |                    |     |
| ih—                                 |       |                    |     |
| rig,                                | 50    | cs.                |     |
| W—                                  |       |                    |     |
| —                                   | 84    | cks.               |     |
| bay,                                | 27    |                    |     |
| enburg,                             | 7     |                    |     |
| tholm,                              | 2     |                    |     |
| —                                   |       |                    |     |
| terdam,                             | 12    | cks.               |     |
| —                                   | 100   |                    |     |

|                 |             |
|-----------------|-------------|
| Bergen,         | 3           |
| Christiania,    | 5           |
| Danzig,         | 6           |
| Drontheim,      | 5           |
| Helsingfors,    | 106         |
| Hamburg,        | 14          |
| New York,       | 300         |
| Rotterdam,      | 7           |
| Wyburg,         | 25          |
| <b>Varnish—</b> |             |
| Antwerp,        | 1 ck. 2 cs. |
| Bordeaux,       | 3           |
| Drontheim,      | 2           |
| Ghent,          | 2           |
| Gothenburg,     | 1 dm.       |
| Norrkoping,     | 1           |
| Wyburg,         | 5           |
| <b>Whiting—</b> |             |
| New York,       | 59 cks.     |

**GLASGOW.**  
Week ending June 4th.

|                                         |              |
|-----------------------------------------|--------------|
| <b>Acids—</b>                           |              |
| Bombay,                                 | £1,328       |
| <b>Albumen—</b>                         |              |
| Lisbon,                                 | £53          |
| <b>Ammonium Carbonate—</b>              |              |
| Bombay,                                 | £20          |
| <b>Ammonium Sulphate—</b>               |              |
| Barbadoes,                              | 121 t. 5½ c. |
| Palermo,                                | 5            |
| Amsterdam,                              | 30           |
| Rotterdam,                              | 20           |
| Barcelona,                              | 101 18½      |
| Demerara,                               | 279 14½      |
| Spain,                                  | 201 12½      |
| Trinidad,                               | 52 7½        |
| Valencia,                               | 297 14½      |
| <b>Carbonate of Lime—</b>               |              |
| Lisbon,                                 | £20          |
| <b>Caustic Soda—</b>                    |              |
| B. Ayres,                               | 3 t. 9½ c.   |
| <b>China Clay—</b>                      |              |
| Bombay,                                 | 12 t. 14 c.  |
| <b>Coal Products—</b>                   |              |
| <b>Carbolic Acid</b>                    |              |
| Germany,                                | 11 t.        |
| <b>Creosote Oil</b>                     |              |
| France,                                 | £1,200       |
| <b>Naphtha</b>                          |              |
| Havre,                                  | £47          |
| <b>Pitch</b>                            |              |
| Rotterdam,                              | 19 t.        |
| Antwerp,                                | £114         |
| Mauritius,                              | 20           |
| Santander,                              | 98 8 c.      |
| Canada,                                 | 170          |
| U.S.A.,                                 | 400 cks.     |
| <b>Tar</b>                              |              |
| Danzig,                                 | 60 t.        |
| Riga,                                   | 500 brls.    |
| U.S.A.,                                 | £120         |
| <b>Tar Acids</b>                        |              |
| U.S.A.,                                 | £40          |
| <b>Tar Oil</b>                          |              |
| Hamburg,                                | 2 t.         |
| <b>Coal Products—(otherwise undes.)</b> |              |
| Rotterdam,                              | 6 t.         |
| <b>Dried Blood—</b>                     |              |
| Ghent,                                  | £61          |
| <b>Dyestuffs (otherwise undes.)—</b>    |              |
| Lisbon,                                 | £37          |
| Barcelona,                              | 107          |
| Campbellford,                           | 103          |
| Canada,                                 | 756          |
| Spain,                                  | 29           |
| <b>Extracts—</b>                        |              |
| Lisbon,                                 | £112         |
| Toronto,                                | 179          |
| <b>Guano—</b>                           |              |
| Palermo,                                | 5 t. ½ c.    |
| Barbadoes,                              | 50 2         |
| Demerara,                               | 20 1         |
| <b>Iron Sulphate—</b>                   |              |
| Bombay,                                 | 26 t. 18½ c. |
| Karachi,                                | £34          |
| <b>Lead Nitrate—</b>                    |              |
| Genoa,                                  | 2 t. 8½ c.   |
| <b>Lime—</b>                            |              |
| Trinidad,                               | 18 t. 1 c.   |
| <b>Linseed Oil—</b>                     |              |
| Natal,                                  | 5 t. 19½ c.  |
| Rangoon,                                | 2 ¾          |
| B. Ayres,                               | 1 19½        |
| Canada,                                 | 1 4¾         |
| Pietermaritzburg,                       | 19           |
| Trinidad,                               | 3 3          |
| <b>Logwood—</b>                         |              |
| Oporto,                                 | £62          |
| Paris, Ont.,                            | 53           |

|                              |              |
|------------------------------|--------------|
| <b>Manganese—</b>            |              |
| Fiume,                       | £105         |
| <b>Manure—</b>               |              |
| Barbadoes,                   | 100 t.       |
| Trinidad,                    | 93 7½ c.     |
| U.S.A.,                      | 19 10        |
| <b>Muriatic Acid—</b>        |              |
| Bombay,                      | £35          |
| <b>Ochre—</b>                |              |
| U.S.A.,                      | 2 t. 7 c.    |
| <b>Paint—</b>                |              |
| Nagasaki,                    | £35          |
| Valparaiso,                  | 50           |
| Limon,                       | 43           |
| Saigon,                      | 30           |
| Singapore,                   | 100          |
| Limon,                       | 13 c.        |
| <b>Painters' Colours—</b>    |              |
| Algoa Bay,                   | £50          |
| Cape Town,                   | 21           |
| Natal,                       | 73           |
| Amsterdam,                   | 5            |
| Bombay,                      | 46           |
| Calcutta,                    | 306          |
| E. London,                   | 57           |
| Rangoon,                     | 132          |
| Johannesburg,                | 21           |
| Pietermaritzburg,            | 22           |
| <b>Paraffin Wax—</b>         |              |
| Genoa,                       | £486         |
| Riga,                        | a qty.       |
| —                            | 36           |
| Barcelona,                   | 456          |
| Bordeaux,                    | 91           |
| Lisbon,                      | 20           |
| Venice,                      | 141          |
| Danzig,                      | 1 t.         |
| Nantes,                      | 22           |
| Rouen,                       | 66           |
| <b>Potassium Bichromate—</b> |              |
| Genoa,                       | £760         |
| Lisbon,                      | 100          |
| Venice,                      | 139          |
| Rotterdam,                   | 22           |
| Antwerp,                     | 799          |
| Barcelona,                   | 418          |
| Bombay,                      | 43           |
| Paris,                       | 208          |
| Rouen,                       | 55           |
| <b>Sheep Dip—</b>            |              |
| B. Ayres,                    | £139         |
| <b>Soap—</b>                 |              |
| Trinidad,                    | 9 t. 16½ c.  |
| Antwerp,                     | 1 2½         |
| Bombay,                      | 2 5½         |
| E. London,                   | 5            |
| France,                      | 4 1          |
| Johannesburg,                | 3 9½         |
| U.S.A.,                      | 1 2          |
| <b>Sodium Bichromate—</b>    |              |
| Canada,                      | 5 t. 1 c.    |
| Genoa,                       | 32 8½        |
| Lisbon,                      | 19           |
| Barcelona,                   | 5 7          |
| Rouen,                       | 2 4½         |
| <b>Sodium Iodine—</b>        |              |
| Rotterdam,                   | 10 t.        |
| <b>Sodium Sulphate—</b>      |              |
| Lisbon,                      | £24          |
| <b>Starch—</b>               |              |
| Lisbon,                      | £40          |
| <b>Sulphuric Acid—</b>       |              |
| Trinidad,                    | £150         |
| Rangoon,                     | 299          |
| Demerara,                    | 193          |
| <b>Tallow—</b>               |              |
| Lisbon,                      | 5 t. 12 c.   |
| Oporto,                      | 1 6          |
| <b>Treacle—</b>              |              |
| Christiania,                 | 15 t. 15½ c. |
| <b>Varnish—</b>              |              |
| Bombay,                      | £80          |
| <b>White Lead—</b>           |              |
| Tientsin,                    | £20          |

**TYNE.**

Week ending May 30th.

|                  |            |
|------------------|------------|
| <b>Alkali—</b>   |            |
| Kalmar,          | 30 t. 1 c. |
| Drammen,         | 20 1       |
| Gothenburg,      | 5 4        |
| <b>Antimony—</b> |            |
| Antwerp,         | 2 t. 1 c.  |
| Hamburg,         | 2 10       |
| <b>Arsenic—</b>  |            |
| Christiania,     | 3 c.       |
| <b>Barium—</b>   |            |
| Rouen,           | 25 t. 7 c. |

|                             |             |
|-----------------------------|-------------|
| <b>Barium Carbonate—</b>    |             |
| Hamburg,                    | 150 t.      |
| <b>Barium Chloride—</b>     |             |
| Rouen,                      | 10 t. 1 c.  |
| <b>Bleaching Powder—</b>    |             |
| Antwerp,                    | 53 t.       |
| Hamburg,                    | 25 4 c.     |
| Troedhjeim,                 | 10 4        |
| Christiania,                | 36 9        |
| Gothenburg,                 | 21          |
| <b>Caustic Soda—</b>        |             |
| Antwerp,                    | 4 t. 18 c.  |
| Hamburg,                    | 36 17       |
| Gothenburg,                 | 55 2        |
| <b>Colours—</b>             |             |
| Naples,                     | 1 t. 1 c.   |
| <b>Magnesia—</b>            |             |
| Antwerp,                    | 1 c.        |
| Hamburg,                    | 3 q.        |
| <b>Paint—</b>               |             |
| Antwerp,                    | 3 t. 5 c.   |
| Hamburg,                    | 1 10        |
| <b>Rosin Oil—</b>           |             |
| Hamburg,                    | 5 t. 9 c.   |
| <b>Soda—</b>                |             |
| Kalmar,                     | 24 t. 19 c. |
| Aarhus,                     | 7 3         |
| Christiania,                | 7 14        |
| <b>Soda Ash—</b>            |             |
| Kalmar,                     | 97 t. 3 c.  |
| Hamburg,                    | 45 15       |
| Christiania,                | 10 8        |
| Bergen,                     | 6           |
| <b>Sodium Hyposulphite—</b> |             |
| Antwerp,                    | 2 t. 15 c.  |
| <b>Sodium Sulphate—</b>     |             |
| Antwerp,                    | 50 t. 2 c.  |
| <b>Sulphur—</b>             |             |
| Drammen,                    | 175 t.      |
| <b>Tallow—</b>              |             |
| Genoa,                      | 9 t. 6 c.   |
| <b>Tar—</b>                 |             |
| Arendal,                    | 2 t. 10 c.  |
| Stavanger,                  | 5 1         |
| <b>Varnish—</b>             |             |
| Bergen,                     | 1 c.        |
| Naples,                     | 7           |
| <b>White Lead—</b>          |             |
| Hamburg,                    | 6 c.        |
| Stavanger,                  | 2 t. 7      |

**GOOLE.**

Week ending May 27th.

|                                          |          |
|------------------------------------------|----------|
| <b>Chemicals (otherwise undescribed)</b> |          |
| Amsterdam,                               | 20 cks.  |
| Ghent,                                   | 2 cs.    |
| Rotterdam,                               | 1        |
| <b>Coal Products (otherwise undes.)—</b> |          |
| Antwerp,                                 | 6 cks.   |
| Ghent,                                   | 1 cs.    |
| Hamburg,                                 | 1        |
| Rotterdam,                               | 220 1    |
| <b>Dyestuffs (otherwise undescribed)</b> |          |
| Ghent,                                   | 4 cs.    |
| Rotterdam,                               | 92 cks.  |
| <b>Logwood—</b>                          |          |
| Hamburg,                                 | 20 t.    |
| <b>Manure—</b>                           |          |
| Bruges,                                  | 270 bgs. |
| Hamburg,                                 | 140      |
| Ostend,                                  | 50 t.    |
| Rotterdam,                               | 200 bgs. |
| <b>Pitch—</b>                            |          |
| Dunkirk,                                 | 200 t.   |

**GRIMSBY.**

Week ending May 30th.

|                                          |                 |
|------------------------------------------|-----------------|
| <b>Alkali—</b>                           |                 |
| Hamburg,                                 | 30 cs.          |
| <b>Caoutchouc—</b>                       |                 |
| Malmo,                                   | 8 cs.           |
| <b>Chemicals (otherwise undescribed)</b> |                 |
| Antwerp,                                 | 1 ck. 14 crts.  |
| Dieppe,                                  | 4               |
| Hamburg,                                 | 84 dms.         |
| <b>Coal Products (otherwise undes.)—</b> |                 |
| Dieppe,                                  | 246 cks. 4 tins |
| Hamburg,                                 | 5 12 pks.       |
| Rotterdam,                               | 1               |







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AND  
OIL, PAINT and COLOUR REVIEW.

Publishing Offices: 32, BLACKFRIARS STREET, MANCHESTER.

174.

SATURDAY, JUNE 20, 1896.

Vol. XVIII.

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| ach additional 10 words ..... | 0s. 6d.               |

ments of Situations Wanted are inserted at one-half the  
when prepaid, viz.:—

|                               |                        |
|-------------------------------|------------------------|
| o Words and under .....       | 1s. 6d. per insertion. |
| ach additional 10 words ..... | 0s. 3d. "              |

rtisements, Announcements in the Directory Columns, and all Adver  
prepaid, are charged at the Tariff rates, which w be forwarded on

ments intended or insertion in the current week's issue  
the office by Thursday morning at the latest.

## CURRENT TOPICS.

### PAPERMAKERS AND POLLUTION.

THE papermakers of Great Britain are disposed to consider  
that with the growth of committees for enforcing the  
purification of rivers they ought to know their position  
better. Their chief complaint seems to be that there is no  
standard of purity, concerning which grievance they are  
anxious for the Government to receive a deputation.

Papermakers, however, are not the only people who are  
suffering from the absence of anything like a standard to  
work to, yet they are about the only trade that has gone so  
far as to worry the Government about the matter.

At first sight, for a body of gentlemen to pose as the puri-  
fiers of a river without first arriving at a decision as to the  
precise interpretation the word purification is to bear is em-  
phatically farcical. It must be urged on their behalf, how-  
ever, that there are difficulties that present themselves in  
deciding what degree of purity shall be attained, owing to  
the width of the limits within which the extent of the pollu-  
tion fluctuates at different points on a river.

The treatment of works' effluents is always a more or less  
difficult task, and varies in each locality, so that the difficulties  
the polluters have to cope with individually are great. The  
standard *crux* is, however, practically the only difficulty of  
magnitude the controlling committee have to contend with.

Of course, they need to exercise a constant watchfulness  
over all the polluters in their area, but that is a very different  
thing to investigating and solving a problem such as that of  
fixing a working standard.

The fact that this question has remained in abeyance so  
long is, we feel, a slight upon the intelligence of the Boards  
of control.

If the gentlemen in authority were to give this matter care-  
ful consideration, instead of shelving it by pleading that they  
only have to see that pollution is stopped, we feel sure that  
they would inspire with confidence all those they have to deal  
with. Moreover, they would find that after allowing for the  
particular exigencies of the streams under their surveillance  
they were quite capable of fixing upon a standard of purity  
that could be equitably enforced.

It is obviously unsatisfactory, not to say unjust, that a pol-  
luter should be compelled to stop polluting without knowing  
to what extent he has to purify, and when he will be able to  
say, "I have done what you demanded, and cannot justly be  
expected to do more." At present he never knows when he  
has done. He may put down a plant that turns out an  
effluent as good as his neighbour's, and then be told that his  
works are "inefficient."

The experience of the last six years tends to confirm the  
belief that it is because the authorities fear the advent of the  
day when a manufacturer can take up the position just out-



lined, that they still persist in the one-eyed policy of tabooing standards.

It has suggested itself to us that, in order to safeguard themselves, the authorities would fix excessively severe standards, and so the manufacturers would be the greatest losers in the long run. Such a possibility, however, is very remote. If really oppressive regulations were suggested it would not be a very difficult thing to show that the authorities were exceeding their rights, or out of their depth. At present it is well nigh impossible to do either, as they acknowledge no limitations in the matter of purity. It is very certain that if they had a definite standard to enforce, though it be different for each river, or even each reach of the same, the work of purification would progress with far greater certainty and satisfaction. The time element that is now becoming so troublesome would also be to a large extent eliminated, as it would be far easier to allot a time for the completion of works, and polluters would know just what they had to do.

#### THE IMAGINARY AND THE REAL.

About a year ago there was a great furore over the so-called devastation of the Falls of Foyers because they were to be utilized for the generation of power.

At that time we ventured to uphold the scheme for utilizing the ornamental, in spite of the flood of opposition that filled the papers. We then suggested that the best judges in the matter were those directly affected, and drew attention to the significant fact that the least opposition came from the neighbourhood which was to be "desecrated."

Explanatory statements were made at the time by the ruthless depredators, but they apparently did not count for much, because they were mainly confined to facts instead of being couched in the high-falutin' language of the alarmists. Since then twelve months have elapsed, and the about to be, now is; but the reality is a very different thing to the picture conjured up by those who confidently foretold the destruction of the falls and the conversion of the rural surroundings into a second Widnes.

As a matter of fact, the change promises to operate wholly for the better. The sudden rising of the water in winter will be avoided, while there is every promise that the storage provided to retain the water so suddenly accumulated will enable the falls as well as the works to be regularly supplied during the droughts of summer.

The electrical decomposition of pure alumina does not suggest air pollution or malodorous effluents, while the erection of a new hotel and model village, lit throughout by electricity, is unfortunately in no way reminiscent of worthy, but unsightly, Widnes. There are a few more comparisons that might be drawn between the future, as portrayed in the hysterical utterances of the well-meaning but unwise, and the reality as it reveals itself to-day. Such contrasts, however, would of necessity become more or less personal, as well as uncomplimentary, so we will abstain from drawing them. We have urged on previous occasions that personalities are not arguments, and we must act on our principle.

**EXTENSION OF AN ELECTRO-CHEMICAL INSTITUTE.**—The Electro-technical Institute of Darmstadt, Germany, has received about £20,000. from the Government for the purchase of new ground and for the enlargement of the buildings.

**POLLUTION OF THE SHIP CANAL.**—Recently, Messrs. Ockleston and Co., paper makers, Partington, were summoned at Altrincham, at the instance of the Mersey and Irwell Joint Committee, for causing poisonous liquid to flow into the Mersey and the Ship Canal. The offence was admitted, Messrs. Ockleston urging in defence that they had done all that was possible to meet the case. The bench fined them £5. and costs, and ordered a satisfactory effluent to be turned out within six months.

## Parliamentary Jottings.

### FERTILIZERS IN SOUTH VICTORIA LAND.

In the House of Commons, on Monday, in reply to Sir G. Baden-Powell (Liverpool, Kirkdale).

Mr Chamberlain said: A licence has recently been granted to Mr. T. Bowick to occupy so much land as lies within ten miles in any direction of Cape Adair with the exclusive right of removing guano and other fertilizing substances for three years, but there is nothing in the licence as to minerals. Sir J. Ross, in January, 1841, took possession of South Victoria Land in the name of her Majesty, but as to its area I have no definite information.

### THE RIVER BRENT.

**A**NENT the pollution of this river, which was before Parliament recently, the Rev. E. Barter, of the Rectory, Hanwell, has written to the *Times* calling attention to the "very serious danger" arising from the polluted state of the river. Mr Barter says:—"Last week a question on this subject was asked of the President of the Local Government Board in the House of Commons. It met with the usual stereotyped reply that inquiries had been made. Yes, sir, inquiries have been made at intervals during the last few years, but they lead to no result. The evil in all its repulsiveness has been exposed time and again, but all to no purpose; nothing has been done. I forward you enclosed a copy of 'Dr. S. Monckton Copeman's report to the Local Government Board on the sanitary condition of the river Brent, in the County of Middlesex,' dated October 31st, 1893, and I venture to fix your observation on the following extracts from it:—"I was informed that the greater portion of the water, which at one period had been accustomed to find its way into the Thames along the river channel, was now diverted by the Regent's Canal Company. . . . I learn, further, that no water whatever has been passed on to the river from the reservoir (Welsh Harp reservoir) for about four months. . . . At the present time, for all practical purposes, the effluent of the sewage farm may be looked upon as the source of the river Brent. . . . At different points throughout the course of the river below the reservoir crude sewage and other putrescent fluids are discharged into the stream by private owners and others.' What an indictment! justifying surely the extremest measures and the promptest measures! Yet since it was penned matters have been permitted to grow much worse, and the outlook in these parts has become very serious indeed. Can it be law that a company is allowed to rob us of our water by diverting it in the upper reaches of the river in time of drought, and to flood us out (as they do) in time of rain, all at their own arbitrary pleasure? Can it be law that sanitary authorities and private owners along the river banks are allowed to discharge their sewage (much of it admittedly in a crude state) into the stream? That the matter demands immediate attention is evident from the fact that there are serious outbreaks of diphtheria and scarlet fever amongst the thousand children of the Central London District Schools situated in this parish and bordering on the river, and also from the fact that during the last few months we have twice had to close our local schools owing to severe epidemics. The infant schools are now closed for this very cause."

### THE MINERAL OIL INQUIRY.

**G**IVING evidence before Mr. Mundella's Committee last week, Professor Atfield (London) said he attended at the request of the Corporation of the City of Glasgow, and he gave evidence relating to accidents from fire in that city from the years 1886 to 1895. In speaking of Mr. Spencer's recommendations, he said he would prefer that the reservoirs of the lamps should be made of good, strong, clear glass. The burners should be fitted with good screws instead of the bayonet-points now used. Some non-conducting matter should be used as packing between the vessel and the iron stand; and, as long as dangerous oils were used, the lamps should contain air-holes covered with wire. They should be constructed as simply as possible, with ready access for cleaning. The elongated burners, he thought, dangerous, because they heated the oil. There should be a wick-rod attached to the burner running down to the bottom of the container. Glass lamps were less dangerous than metal ones, because they were cooler. Metal lamps had advantages, but they heated the atmosphere very considerably, and so long as they used oils that gave off inflammable vapour under 100°F. the advantages were overbalanced in consequence of the increased risk due to that temperature. The costness of glass and other advantages more than compensated for the danger to which its brittleness subjected it. The only way, however, to ensure anything like safety was to raise the flashing-point of petroleum to 100° Fahr. The committee then adjourned.



Wednesday, Mr. Francis Bateman Allen, representing the Association, gave evidence to the effect that accidents from petroleum lamps were not out of proportion to the number of lamps in use. Neither were fires caused by them out of proportion to fires arising from other causes. He gave some instances from which he drew this conclusion. Under ordinary circumstances accidents to mineral oil lamps were impossible, and while it was in proper order it was almost impossible to cause an explosion. Mr. Allen, continuing, gave the results of some experiments made with lamps having glass reservoirs. He threw a dozen of them and what the result would be when the reservoirs broke. Out of three did not break, but in the case of the others which did break there was no explosion. He objected to the prohibition of glass containers as it was his opinion that it would be unwise. He suggested that it would be made compulsory that strong glass reservoirs should be used and that the use of thin common ones should be prohibited. His opinion was that strong glass containers were better than metal ones as the oil remained cooler, and there was not the necessity of replenishing so often. He suggested that it was not necessary to see whether the reservoir needed replenishing. To reason he attached very great importance.

## The Patent List.

It is compiled from Official sources in the Manchester Laboratory, under the immediate supervision of Davis and Alfred R. Davis, who report professionally value of Chemical Patents.

ICATIONS FOR ENGLISH LETTERS PATENT.

ire of Explosives. C. G. André and C. H. Curtis. 11,842. June 1.  
 Metals and Manufacturing Alloys. J. B. Torres. 11,927. June 2.  
 Gas from Peat, &c. J. Meikle. 11,951. June 2.  
 sting Paint. T. Turnbull. 11,967. June 2.  
 acting Machine. V. B. F. Bayley. 12,027. June 2.  
 Soaps. J. M. C. Grierson. 12,073. June 3.  
 ents in Evaporating Brine. E. Paul. 12,104. June 3.  
 efractory Ores. E. Govet. 12,106. June 3.  
 ilk. W. P. Dreiser and H. K. Tompkins. 12,115. June 3.  
 Precious Metals from Refractory Ores. J. Woolford. 12,129.  
 ents in Electrolytic Apparatus. T. J. Holland. 12,149. June 3.  
 bricant. R. Haddon. 12,166. June 3.  
 Stone. A. J. Boulton. 12,169. June 3.  
 ad Apparatus for Extracting Gold. A. Trenk. 12,200. June 4.  
 ire of Nitrocellulose. J. W. Swan. 12,220. June 4.  
 Lubricant. F. J. Reinisch and H. Lesser. 12,228. June 4.  
 ing Precious Metals from their Cyanide Solutions. M. B.  
 12,255. June 4.  
 ig Fluid. H. H. Perkes. 12,317. June 5.  
 Chromium Alloys. E. A. G. Street. 12,396. June 6.  
 ne Hydraulic Mortar. L. Mack. 12,425. June 6.  
 Waste Heat of Furnaces. E. Fettweis. 12,460. June 5.  
 ire of Alloys. E. A. G. Street. 12,467. June 6.

ACTS OF LATEST COMPLETE SPECIFICATIONS.

Abstracts are specially prepared for the Chemical Trade Journal, RIGHTS of publication are RESERVED. This is the earliest abstracts of Chemical and allied patents accessible to the

for Reducing certain Metallic Oxides by means of Amalgams  
like Metals. L. Mond 20, Avenue-road Regent's Park London.  
L. 1202 June 20, 1895

(modification of the principles involved in the electrolytic reduction of chloride of sodium with a mercury cathode to the reduction of oxides that are soluble in caustic alkalis). A solution of zinc oxide in caustic soda is placed in a cell and an anode of zinc is introduced. A piece of iron or zinc (or any metal suitable for the amalgam) is introduced. This piece of metal is connected by a conductor to the amalgam. An electric action ensues, the iron being oxidised, while the zinc oxide is reduced and deposited on the zinc cathode. The latter should by preference be cylindrical and constantly rotated, so that the deposit may be homogenous. The action may be hastened by reinforcing the current produced in the cell. In this way no hydrogen gas is evolved, and consequently there is no trouble or danger attending the use of mercury, as it does not volatilise and pass off with the escaping hydrogen.

Working Metallic Sulphides. A. Von Siemens 94, Markgrafen-  
berlin Eng. Pat. 7,123 April, 1895.  
The process is a distinct departure from the Borchers method, and is  
an extension of the Siemens-Halske process, resulting in the  
improvement of the process, and utilisation of bye-products without the

introduction of any new raw materials. The departure is based on the fact that the sulphhydrates and sulphides of the alkaline earths possess similar properties to the corresponding salts of the alkalis.

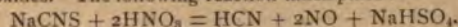
Taking, as an example, sulphide of antimony, this is treated with a lye of calcium sulphhydrate, the escaping hydrogen sulphide being collected. The whole of the gas in this case, however, is not evolved during the extraction process, the remainder coming off in the electrolytic treatment, during which the antimony is deposited.

The lye, after being freed from antimony, is treated with carbon-dioxide, whereby half the sulphur is driven off as hydrogen sulphide, while the other half is precipitated as free sulphur, together with carbonate of calcium. The gas is, of course, collected. The precipitate is heated to redness, out of contact with the air. The sulphur distills over while, the carbonate is decomposed, furnishing carbon-dioxide for the treatment of the spent lye as just described. The resulting caustic lime is employed along with the hydrogen sulphide to prepare fresh sulphhydrate lye. In this way not only is the metal obtained, but the whole of the sulphur is turned to good account.

## Improvements in the Manufacture of Cyanides and Ferrocyanides from

Sulphocyanides, and the Recovery of Bye-products. J. Raschen and J. Brock, both of G 11, Exchange Buildings, Liverpool. Eng. Pat. 30,475. May 27, 1905.

The separation of the sulphur in the sulphocyanide is effected by means of nitric acid, which converts the sulphur into sulphuric acid and liberates the cyanide in the form of hydrocyanic acid. The presence of chlorides in the raw materials should be avoided. Taking sodium sulphocyanide as an example, it is mixed with about five times its weight of water and heated to about 96°C. in a closed vessel fitted with an inlet pipe for nitric acid and an exit for the gases given off. It is also advisable to have a stirrer fitted in the vessel. There should always be an excess of acid, and air must be excluded to avoid the oxidation of the nitrogen oxides. The following reaction takes place:—



The gases evolved are passed through a solution of caustic alkali or an alkaline earth in a suitable absorber. The hydrocyanic acid combines with the alkali, but the nitrogen oxides pass on into another apparatus where they are mixed with air and steam and reconverted into nitric acid. The solution from the absorber can be evaporated to dryness in a vacuum pan, but the residue should not be heated to the fusing point of the cyanide. The reason for this is that traces of higher oxides of nitrogen are present in the gases passing to the absorber and are absorbed along with the hydrocyanic acid. If the cyanide is to be obtained in the anhydrous state, these traces must be removed by passing the gases through hot water in the manner described in patent No. 21,678, 1895. Ferrocyanides can be obtained by subsequent treatment on the usual lines. The absorber should be worked under a slight vacuum so as to avoid the escape of any hydrocyanic acid, but at the same time care must be taken to prevent the entrance of air as far as possible.

## Improvements in the Manufacture of Cyanides and Ferrocyanides from

Sulphocyanides, and the Recovery of Bye-products. J. Raschen and I. Brock, both of G 11, Exchange Buildings, Liverpool. Eng. Pat. 10 926. June 1, 1895.

This patent is substantially the same in principle as the foregoing, the only difference being that other oxidants are suggested in lieu of nitric acid. Thus, a nitrate, chromate, peroxide of lead, manganese oxide, or the like is used in conjunction with water and sulphuric acid. The precautions and working conditions described above apply in this case the same as in the other, there being practically no difference between the two processes.

## STATE OF THE CHEMICAL TRADES.

**S**HORT time is being worked in several of the chemical factories in the Tyne and Wear district, but copper works are busy. Things are also better with cement and white lead makers. Salt workers at Middlesbrough are fairly well employed, but otherwise trade is rather quiet. In the Manchester district flint glass makers, paper stainers and soap makers are moderately employed. Pulp workers at Barrow-in-Furness are busy. In the Liverpool district glass bottle makers are actively engaged, but the chemical trade is only moderate. Stoppages for re-construction have affected employment in the chemical works at Middlesbrough, but the salt trade at Winsford has been fairly good. The oil industry has been bad at Hull and district, but the paint trade has been good on the whole. At Nottingham dyers are dull, and the same may be said of bleachers. There has been a decided improvement in the flint glass trade at Brierley Hill, and in the neighbourhood of Wolverhampton chemical and tar distilling works are doing well, while oil and colour works are busy. There are favourable reports of the state of trade at chemical works in the Ruabon district, but the reports from South Wales are less satisfactory.



## Official Memoranda.

(From the Board of Trade Journal.)

### THE GERMAN-JAPANESE COMMERCIAL TREATY.

Under this treaty the following duties are charged upon German goods imported into Japan:—

| Article.                            | Duty.                   |
|-------------------------------------|-------------------------|
| Amorphous Phosphorus.....           | 10% <i>ad valorem</i> . |
| Subnitrate of Bismuth .....         | 10 "                    |
| Bromine .....                       | 10 "                    |
| Quinine.....                        | 8 "                     |
| Chlorate of Potash .....            | 10 "                    |
| Dynamite.....                       | 10 "                    |
| Arsenite, or Iodide of Potash ..... | 10 "                    |
| Nitrate of Potash .....             | 5 "                     |
| Salicylic Acid .....                | 10 "                    |
| Aniline Dyes .....                  | 10 "                    |
| Alizarine Dyes .....                | 10 "                    |
| Logwood Extract .....               | 10 "                    |
| Oil Paints .....                    | 10 "                    |
| Paraffin Oil .....                  | 10 "                    |
| Paraffin Wax .....                  | 3 "                     |
| Portland Cement.....                | 5 "                     |

### NEW CUSTOMS TARIFF OF MAURITIUS.

The following duties are now levied on articles entering Mauritius:—

|                                                                                                                                                                                  |                  | Rs. | c. |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|-----|----|
| Sulphur, Common .....                                                                                                                                                            | per 100 kilos.   | 0   | 70 |
| " Refined.....                                                                                                                                                                   | "                | 1   | 30 |
| Candles, Paraffin.....                                                                                                                                                           | "                | 3   | 0  |
| " Sperm .....                                                                                                                                                                    | "                | 3   | 0  |
| " Wax .....                                                                                                                                                                      | "                | 10  | 0  |
| " Composition .....                                                                                                                                                              | "                | 3   | 0  |
| Cement.....                                                                                                                                                                      | "                | 0   | 30 |
| Charcoal .....                                                                                                                                                                   | "                | 0   | 10 |
| Dyewood .....                                                                                                                                                                    | per 1,000 kilos. | 11  | 0  |
| Dynamite.....                                                                                                                                                                    | per 100 kilos.   | 14  | 0  |
| Gambier or Cutch .....                                                                                                                                                           | "                | 2   | 20 |
| Indigo, Prussian Blue, Ultramarine, and Laundry Blue .....                                                                                                                       | per kilo.        | 1   | 10 |
| Lime.....                                                                                                                                                                        | per 100 kilos.   | 0   | 20 |
| Manure of all sorts; and the following substances when imported for the purpose of being used in the preparation of manures, or of other colonial produce, or as disinfectants:— |                  |     |    |
| Ammoniacal liquor.....                                                                                                                                                           |                  |     |    |
| Bones, bone dust, bone oil, and dissolved bones .....                                                                                                                            |                  |     |    |
| Carbolic acid .....                                                                                                                                                              |                  |     |    |
| Carbonate of baryta .....                                                                                                                                                        |                  |     |    |
| Chloride of lime and of potassium .....                                                                                                                                          |                  |     |    |
| Chloride of manganese .....                                                                                                                                                      |                  |     |    |
| Chloride of soda .....                                                                                                                                                           |                  |     |    |
| Chloride of zinc .....                                                                                                                                                           |                  |     |    |
| Coal and wood root .....                                                                                                                                                         |                  |     |    |
| Dried muscular flesh and dried blood....                                                                                                                                         |                  |     |    |
| Ether .....                                                                                                                                                                      |                  |     |    |
| Fish and other substances damaged and condemned by the Customs sanitary officers as fit for manure only .....                                                                    | per 1,000 kilos. | 0   | 30 |
| Lime, carbonate of lime, sulphate of lime or gypsum, phosphate and superphosphate of lime .....                                                                                  |                  |     |    |
| Nitrates, silicates, and carbonates of potash and soda .....                                                                                                                     |                  |     |    |
| Perchloride of iron.....                                                                                                                                                         |                  |     |    |
| Permanganate of potash .....                                                                                                                                                     |                  |     |    |
| Phosphate of soda .....                                                                                                                                                          |                  |     |    |
| Phosphoric acid (solid) .....                                                                                                                                                    |                  |     |    |
| Substances imported by agriculturists and to be used in the destruction of insects or other parasites prejudicial to agriculture                                                 |                  |     |    |
| Sulphate of iron.....                                                                                                                                                            |                  |     |    |
| Sulphate and muriate of ammonia and other ammoniacal salts .....                                                                                                                 |                  |     |    |
| Sulphate of potash.....                                                                                                                                                          |                  |     |    |
| Sulphate of zinc.....                                                                                                                                                            |                  |     |    |
| Sulphuric acid.....                                                                                                                                                              |                  |     |    |
| Urine .....                                                                                                                                                                      |                  |     |    |

|                                       |                |
|---------------------------------------|----------------|
| Pitch.....                            | per 100 kilos. |
| Salt .....                            | "              |
| Soap (not scented) .....              | "              |
| Soda (caustic) .....                  | "              |
| Sulphate of iron .....                | "              |
| " copper } other than agricultural .. | "              |
| Tallow .....                          | "              |
| Turpentine .....                      | per hectolitre |

### MINOR TARIFF CHANGES.

WOOL WASTE imported into Russia is now dutiable at 30 (gold) per pood.

PLATINUM articles used for technical purposes in which platinum is exclusively employed, are to be admitted into Sweden free. This change will probably come into effect soon.

PARAFFIN, whether purified or not, when presented for clearance into Lisbon will in future have to pay a duty of 2 reis (0.1d.) per kilo.

FERTILIZERS, whether natural or artificial, including guano, will have to pay an import duty of 5 centimes per 100 kilos entering Spain, *through the port of Barcelona*. These articles in addition to those enumerated in sections No. 5, 251 and 252 of the tariff. The duty has been imposed to provide for the construction of a new Custom House at Barcelona.

SODA ASH mixed with soap, the former being the chief ingredient, is dutiable in the United States of America at one quarter of a cent per pound, which is the rate for soda ash under par 67.

### NEW GERMAN IRONWORKS IN SOUTH RUSSIA.

Her Majesty's Minister at Dresden states that the spirit of enterprise is now the rule in every department of German industrial activity.

As an example of this, the "Dresden Bank" has lately acquired with the great Chemnitz machinery house (Hartmanns) to open extensive ironworks at Lugansk, in South Russia. The land is purchased and the buildings are well advanced. It is intended to erect wide foundries with furnaces for the Martini-Siemens process. There will be a branch for constructing railway apparatus and machinery. The locality selected is described as abounding in coal and ores, as blast furnaces, and as being well supplied with skilled labour.

### BRITISH TRADE IN THE CYCLADES.

Her Majesty's Consul at Syra states that the development of trade in the Cyclades Islands rests mainly on the amount of enterprise activity exhibited in competing with foreign markets; this, unfortunately, does not appear to extend much beyond the distribution of a few catalogues and circulars, and there is not even the shadow of a commercial traveller. If British manufacturers wish to retain their position on these markets or open up new ones, it certainly would be a waste of time for a smart traveller, able to speak French, to make an occasional visit to that part of the world, not merely as a representative of a single firm and only one class of goods, but of various manufactures, such as oils, paints, dyes, chemicals, perfumery, cutlery, goods, hardware, lamps, rope, hats, yarns, cotton stuffs, silks, machinery, earthenware, and glass; this could not fail to produce an increase of business and profitable results.

### SWEDISH WOOD PULP AND SUGAR TRADE.

The wood-pulp industry has been increasing rapidly of late in Sweden. At the end of 1893 there were 93 factories in operation producing in that year 96,000,000 kilos.

The development of the beet sugar industry has been very successful. In the year 1890 there were only four factories in operation, but others have been set up each successive year, so that at the present time there are eighteen in operation, producing nearly 100,000 tons of raw sugar annually.

INCREASED FACILITIES FOR OIL AT BATOUM.—The deepening of the port of Batoum to 26 feet at the naphtha loading is now finishing. The mole is to be extended to a length of 1,700 feet so that the port can serve as a station for the Black Sea fleet in all weather. With this purpose in view the Government has appropriated 5,000,000 roubles on the port, and now 750,000 roubles have just been granted to continue the work.

LIVERPOOL PORT DUES ON SALT.—The Salt Union, which has made a communication to the Liverpool Chamber of Commerce, subject of the duties charged at this port on salt, and to the desirability of their reduction, have been asked for a further detailed statement showing how this port compared with other ports in the matter of salt duties, and they have been informed that such a statement, if required, would be laid by the Chamber before the Mersey Docks and Harbour Board, with a request that the question should be recom-



## Reports of Companies.

### SMOKELESS POWDER CO., LTD.

Report of the directors for the year ended March 31st last states that there was a considerable increase in the home orders for S.S. powder, the sales being about 10% in excess of the previous year. The total sales, however, were considerably less, owing to a part order having been shipped in March, 1895, which was not in 1896, but which they fully expect to receive within the next six months. They have also to report a large increase in the sales of powder of the "Rifleite" class. Owing, however, to increased competition from cordite and similar powders which are now manufactured by a number of private firms, the prices obtained have been in the previous year, which accounts for the somewhat smaller gross profits. At the Bisley meeting of the National Rifle Association last year no less than five powders were represented and for competition. The company's "Rifleite '303" powder with the top score and top average in all the 900 yards '303 breech-loading competitions, the best score being that of the 2nd V.B. Liverpool, 48 out of a possible 50. In the last twelve months the company's works manager and he have been actively engaged in preparing and perfecting a powder "Rifleite" class for sporting purposes. This powder has now entered on the market under the name of "Shot-Gun Rifleite," and the directors believe it to be a valuable addition to the company's stores. With a view to the extension of the company's business the establishment of further agencies abroad, the directors expect the secretary should make a prolonged tour through the States and Canada, New Zealand, and Australia, returning to India and Ceylon. His visit to the former resulted in good results in the States and the establishment of a fresh agency in London from which it is anticipated that a new and profitable business will be opened up during the coming year. Unfortunately, he was unable to complete his tour, being obliged to return to England owing to the expected death of the late managing director. As arranged at a meeting in June last, the directors thereafter offered for sale 7,000 of the unissued shares to shareholders and their whole of which were applied for, and allotted. The proceeds of the issue were utilised in the repayment of the sum of £3,781, and in the payment of loans at interest due by the company as shown in the balance-sheet; £2,258, being devoted to the extensions required at the time which were completed in July last. With the increase of 52,897 shares of £1. each, with 18s. paid, the directors were enabled to make an application to the Stock Exchange Committee for quotation of the company's shares, which they have much to their credit in stating was granted in September last. After writing off of the amount charged to suspense, the accounts show a profit of £1,284, at the credit of profit and loss, out of which the directors recommend that a dividend be paid at the rate of 2½% for the year ended March 31st last, which will absorb £1,190., and that the balance be carried forward.

### GREENWOOD AND BATLEY, LTD.

The directors, in their report for the twelve months ended March 31st last, after providing for the interest on the debentures and expenses of management, writing off the sum of £5,000. for the year, and making a provision of £650. for doubtful accounts, the accounts show a net profit of £11,576., and a balance from last year, there is a sum available of £12,045. The directors recommend that a dividend of 10½ per cent., being 7 per cent. for the year 1893-94 and half of the sum in the year 1894-95, should be paid on the preference shares, which will absorb £10,541., leaving a balance of £1,504. to carry forward. The directors are glad to state that the works are fully at the present time, and the contracts on hand and in hand give good reason to hope that the results of the current year will prove satisfactory.

### PACCHIA JAZPAMPA NITRATE CO., LTD.

At the annual general meeting of this company was held on Tuesday, the 18th inst., at the residence of Mr. J. J. Smith presiding. After expressing regret at the death of Colonel North (the late chairman of the company), the chairman moved the adoption of the report, remarking that there had been a loss on the year's working of £27,298. and, after the amount brought forward, a balance of £15,317. to the debit of profit and loss account. The loss on manufacture had been £10,250., the balance being made up by the loss on the year. He hoped that there would be no recurrence of the loss and there would not be if he had any voice in the matter. He wished for combination had now been settled, and, although the prices had not as yet arisen, he had no

doubt that this was only delayed in consequence of the large stocks of nitrate at present on hand. They had every reason to believe that the selling price would advance, and that they would be able to make good profits. The profit on exchange during the year was £8,306. A large number of oficinas had availed themselves of their option to work on trial for three months from March 18 last, in order that their annual quota of manufacture might be determined. The stocks of nitrate and cargoes afloat had been taken at their probable selling value, but the iodine had been taken at cost price. The motion having been seconded, a long discussion followed, in the course of which considerable dissatisfaction was expressed at the report, and an amendment was proposed in effect rejecting it. The chairman, in reply, at the close of the discussion, stated that the directors had received no fees for their services, while they had had a very anxious time. He strongly denied, on the part of his colleagues and himself, that any speculation had been engaged in by them in the company's shares; the Board had done nothing to influence the market in any way. The company's financial position would not allow them to keep large stocks in hand, and if they had closed the works they might not have been able to obtain the labour when they had to resume operations. The current year's working had been better, and he hoped they would be able to submit a more favourable statement at their next meeting. The amendment was eventually withdrawn, and the original motion was subsequently adopted.

### LAUTARO NITRATE CO., LTD.

The report made up to December 31, 1895, shows a net balance, after allowing for depreciation of grounds, plant, etc., and the appropriation for sinking fund for redemption of debentures, of £52,278, making with the balance brought forward £58,541. An interim dividend of 5 per cent. was paid in January, and the directors now recommend a further dividend of 5 per cent., making 10 per cent. for the year, leaving £3,541. to be carried forward.

## IMPORTS AND EXPORTS FOR MAY.

THE Board of Trade returns are not quite so favourable as during the earlier months, but chemical items in the imports do not seem to have suffered greatly. In the exports alkali cuts a sorry figure, but salt shows an increase of rather better than 10%. Iron and steel have also an improvement to show.

### IMPORTS OF FOREIGN AND COLONIAL PRODUCE

| ARTICLES.                   | Quantities.      |            |
|-----------------------------|------------------|------------|
|                             | 1895.            | 1896.      |
| Margarine .....             | Cwt. 63,094      | 61,521     |
| Copper Ore and Regulus..... | Tons. 8,066      | 9,549      |
| Pyrites.....                | " 48,752         | 49,343     |
| Tin .....                   | Cwt. 74,465      | 62,871     |
| Alkali .....                | " 22,126         | 18,134     |
| Brimstone .....             | " 72,185         | 77,185     |
| Dyes, Coal Tar .....        | £. 56,378        | 59,410     |
| Saltpetre .....             | Cwt. 22,302      | 41,254     |
| Petroleum .....             | Gall. 13,554,281 | 11,467,310 |
| Turpentine .....            | Cwt. 10,271      | 11,764     |
| Guano .....                 | Tons. 6,409      | 590        |
| Nitrate of Soda .....       | " 18,934         | 8,750      |
| Paraffin .....              | " 48,575         | 38,984     |
| Rosin .....                 | Cwt. 111,618     | 62,202     |
| Tallow and Stearine.....    | " 135,782        | 171,902    |
| Oil Seed Cake .....         | Tons. 27,426     | 25,612     |
| Wood Pulp.....              | " 20,989         | 29,304     |

### EXPORTS OF BRITISH AND IRISH MANUFACTURES.

| ARTICLES.               | Quantities.   |           |
|-------------------------|---------------|-----------|
|                         | 1895.         | 1896.     |
| Alkali .....            | Cwt. 617,580  | 374,564   |
| Cement .....            | Tons. 40,572  | 34,527    |
| Coal and Coke .....     | " 3,112,206   | 3,107,896 |
| Copper, all kinds ..... | Cwt. 114,704  | 91,907    |
| Iron and Steel .....    | Tons. 265,663 | 304,018   |
| Chemical Manures .....  | " 25,787      | 21,261    |
| Oils, seed .....        | " 5,539       | 5,349     |
| Salt .....              | " 24,981      | 93,846    |

ENLARGING A SUGAR REFINERY.—The Glebe Sugar Refining Company, Greenock, are about to extend their business, and with this object in view have ordered from Messrs. Duncan Stewart and Co., Glasgow, extensive cube-making machinery, capable of turning out 150 tons of cubes per week.



## Legal Intelligence.

### HIGH COURT OF JUSTICE.

#### QUEEN'S BENCH DIVISION.

COMMERCIAL CAUSES.

(Before Mr. Justice Collins without a Jury.)

THE MAGNOLIA ANTI-FRICTION METAL COMPANY OF GREAT BRITAIN v. FINLAY AND ANOTHER

THIS was an action for an injunction to restrain the defendants from interfering with the plaintiffs' business, by offering for sale a certain metal used for bearings in machinery, and called Magnolia metal. Magnolia metal was manufactured by the Magnolia Metal Company, of New York, the plaintiffs being the agents for the sale of the metal in this country, under a contract dated February 16, 1894. In 1891 and 1892 a German firm manufacturing similar metal began to compete with the plaintiffs, the Germans selling at £37. 10s. per ton, whereas the plaintiffs' price was £112. In June, 1893, the German firm commenced proceedings against the Magnolia Metal Company, attacking their patent for the manufacture and sale of magnolia metal. The defendants, representing the Magnolia Metal Company, at the instance of the plaintiffs, instructed solicitors to defend the suit. After proceedings were taken the plaintiffs furnished the necessary funds, and claimed to be allowed to deduct the amount so paid from the price of the metal forwarded to them, and they further refused to pay for the metal sent them unless the defendants, representing the American Company, paid the solicitor's costs. The plaintiffs, in the name of Lawlor, commenced an action in New York against the Magnolia Metal Company, in the pleadings of which they claimed that the contract of February 16, 1894, was at an end. The defendants upon this treated the contract as at an end, and began to sell the metal themselves. The plaintiffs thereupon sought out the defendants' customers, and informed them that they were the sole agents for the sale of Magnolia Metal in the United Kingdom, for which acts on the part of the plaintiffs the defendants now counterclaimed for damages. The case turned mainly upon the letters and telegrams passing between the parties, which were of a voluminous character.

Mr. Justice Collins, in giving judgment, said the case turned upon the contract of February 16th, 1894, by which the plaintiffs became entitled to sell the whole of the metal in England. If the contract was in existence the plaintiffs had that sole right. The defendants, on the other hand, contended that the plaintiffs had broken and repudiated the contract. There was no express agreement between plaintiffs and defendants that the defendants were to defend the action attacking the patent. It was to the interest of both parties that the patent should be defended, and the plaintiffs offered to accept drafts and receive metal on condition that the costs of the suit were paid by the defendants. It was difficult to lay one's finger upon the precise point where the plaintiffs repudiated the contract. Looking at all the circumstances of the case he came to the conclusion that the plaintiffs had repudiated the contract, and that it had determined, and the defendants were entitled to judgment.

The damages on the counter-claim were agreed at £100.

### GERMAN CHEMICAL INDUSTRY.

THE union of chemical factories, "Silesia," at Breslau, have made a net profit in 1895 of 774,362m. The articles of association of the company have been widened, so as to permit them to engage in trading and manufacturing operations of all kinds. The chemical works, "Elektron," have increased their share capital from 3,000,000m to 4,000,000m, in order to provide for the expenses connected with the working of the electrolytic-potash factory, which they are establishing in conjunction with the Westeregeln Company. The gross profit of the medicinal springs at Ober-Selters in 1895 has been 75,854'15m.; only 28,728m., however, will be divided among the shareholders, who will receive out of this a dividend of 12 per cent. The net profit of the dye-works, formerly A. Leonhardt and Co., at Mulheim-on-Maine, has been 187,637m., of which 150,000m. will be used to provide a 10 per cent. dividend for shareholders. The directors of the company state that trading last year has been less satisfactory than in 1894, the chief reason being the general decline in prices of the prepared articles, together with an increase in those of the raw materials. The total amount of sales, however, has been larger than in the preceding year. The profit of the chemical works at Buckau, in Magdeburg, has been 253,430m., against 325,021m. in the year before. The dividend is to be the same, viz., 8 per cent., and in addition to an amount of 155,739m. spent on new buildings, the factory intends to erect new works for the electrolytic manufacture of bleaching powder and caustic alkalies. The shareholders in the chemical works at Griesheim receive 16 per cent.

dividend for 1895, the same as in the preceding year. The gross profit of the factory last year was 160,104m., and it is proposed to amalgamate the factory with the chemical works "Mainthall." Ladenburg, the British Consul at Mannheim, states that for some past manufacturers have been suffering from an almost continuous of prices. Few articles have escaped the downward movement or advanced, and in these instances their exceptional position is due either to speculation or to combinations of sellers. In the case of sulphuric acid the breakdown of prices was the result of the dissolution of the South German Sulphuric Acid Convention. Keen competition between individual manufacturers at once set in, which was accentuated by impossibility of finding an extended market, owing to the comparatively high rates of freight. Artificial manure manufacturers were unable to do much business in consequence of the depressed state of agriculture, although the demand for their products has improved somewhat during the last few months, without, however, any improvement in price. The sale of chemicals for export was, on the whole, fairly maintained, and some increase of demand for the United States had occurred. On the other hand, that for Spain, which was of considerable importance in ordinary years, had all but ceased. Mr. Ladenburg reveals what probably the cause of the break-up of the South German Convention when he says that the chemical industry in Germany is being overdone. Its extension has progressed faster than the requirements of the markets which it supplies. Referring to the manufacture of chemicals, he reports that a number of newly-invented pharmaceutical products have been brought upon the market at Mannheim, some of which will doubtless prove valuable, but that there were complaints too precipitate introduction of them in a number of instances where sufficient trial of their efficacy had not been made beforehand.

### THE COST OF CALCIUM CARBIDE.

(Continued from Page 387.)

#### METHODS AND RESULTS OF CHEMICAL ANALYSIS.

THE analyses show the lime used to have been of excellent quality, except that the amount of magnesium oxide was a little greater than has been usually considered desirable for making carbide. It contained a very small amount of phosphate of calcium, as should be the case, since any phosphate is reduced in the process to phosphine, which when treated with water gives off phosphine of hydrogen, a commonly considered poisonous, and which is also probably the cause in part, of the peculiar odour of commercial acetylene.

The methods used in the analysis of the materials, both before and after mixing, were well known standard ones. The calcium was determined by double precipitation as oxalate, the magnesium as phosphate, and the carbon by treating the mixture with dilute hydrochloric acid, filtering on a Gooch crucible, drying at 110°C., and igniting at a red heat.

The analyses of the mixtures put into and withdrawn from the furnace show that the loss of material in the two trials was:—

|                     | First trial. | Second trial. |
|---------------------|--------------|---------------|
| Calcium oxide .. .. | 79.4 lbs.    | 72.4 lbs.     |
| Carbon .. ..        | 128.6 lbs.   | 80.66 lbs.    |

The greater loss of carbon in the first run was probably due to burning of the pulverized coke, either during the working of the charge or during the 13 hours which elapsed between the cessation of current and the withdrawal of the material next morning. In the second run, the contents of the furnace were gradually withdrawn almost immediately after the current was interrupted.

Much of this loss of material appears to be due to the somewhat crude methods of handling the material both inside and outside the furnaces. This has been caused by the experimental nature of the plant. A large proportion of the loss of material can probably be saved in the furnaces of improved design.

The proper sampling of the carbide mass taken from the furnace is a difficult operation, as portions selected from different parts of the mass yielded quantities of gas per pound, varying as much as half a cubic foot, while pieces taken haphazard may give results varying from 2 to 2 cubic feet, so that to obtain an absolutely accurate result, the whole mass of carbide should be taken and broken into small pieces. This did not appear to be practicable at Spray, and for the assaying of the carbide in the two runs, portions of the first mass were taken from its bottom, centre, top and sides, and placed in separate soldered cans, while of the carbide formed in the second run, 25 pounds of pieces taken from various parts of the mass were placed in one can.

These various portions were afterwards separately broken up with the hammer to the size of walnuts, then by the usual process of sampling, the amount in each case was reduced to about one-third of a pound, and the pieces to the size of beans.

Three to five analyses of each of these samples were made by weighing out about 50 grammes, immediately enclosing this quantity



paper, and placing it in a graduated glass gas bottle, closed with a three-holed rubber stopper. Through one of the holes was inserted a thermometer, through another a separating funnel, by which measured quantities of water could be allowed to enter the bottle, and through the third hole was passed a delivery tube. The gas on being generated was cooled by passing through six empty tubes surrounded with cold water, and then through a Tuff's wet meter which had been standardised the day before the determinations were begun by the Massachusetts State Inspector of Gas Meters.

The readings of the meter were taken, and the necessary corrections for the volume of water used in decomposing the carbide, the solubility of the carbide in this water, and the increase of volume of gas in the gas bottle by the elevation of temperature were made. The temperature of the water in the meter, the pressure gauge, and the height of the barometer were observed, and the corrected volumes reduced to 60 degrees Fahrenheit and a pressure of 30 inches of mercury.

The gas on analysis was found to contain only traces of phosphide, and sulphide of hydrogen. Free hydrogen could not be detected, though it has been stated that as much as 1 per cent. had been found in commercial acetylene. A test was also made for arsenide of hydrogen with a negative result.

A sample was taken of the gas given off at the top of the upper electrode, during the formation of the carbide, which, on analysis, gave by volume:—

|                       |       |
|-----------------------|-------|
| Carbon dioxide .....  | 76%   |
| Carbon monoxide ..... | 76%   |
| Nitrogen .....        | 16.4% |
|                       | 100%  |

#### COST OF CARBIDE AT SPRAY.

**COST.**—In order to determine the cost of producing carbide of calcium at the Spray works, it was necessary to arrive at the fixed charges on the plant, as well as at the cost of material and labour involved.

The Spray works are not worked steadily at their best commercial capability; and, having been evolved under experimental conditions, are not adapted to the most economical production of calcium carbide. We may assume, however, that the plant is run steadily at its full capacity, and with the performance developed during the runs witnessed, the output may be taken at 2,000 pounds of gross carbide per day.

The cost of water-power is \$5 per horse-power year at the turbine shaft. Taking the efficiency of the alternators as 88 per cent., and of the transformers as 95 per cent., the net efficiency of the electric plant is 83.6 per cent., making the cost of an electric H.P. at the furnace terminals \$5.98. The mean power employed at the switchboard being 103.2 H.P., that generated at the turbine shaft is 230.9 H.P. Adding to the power supplied to crusher, mixer and shafting, 15 H.P., the total power at the turbine shaft is 245.9 H.P., for which the annual cost is \$1,229.50.

#### COST OF THE MANUFACTURING PLANT.

**COST OF PLANT.**—The exact cost of the Spray plant chargeable to the production of carbide is almost impossible to determine accurately, since much of the plant has been installed for purely experimental purposes. The following estimates, however, are based on actual costs:—

|                            |        |
|----------------------------|--------|
| Land .....                 | \$ 100 |
| Building .....             | 1,250  |
| Turbine .....              | 2,892  |
| Electric plant .....       | 6,000  |
| Counter shafting .....     | 200    |
| Crusher and mill .....     | 1,025  |
| Rolls .....                | 238    |
| Furnaces .....             | 150    |
| Equipment, tools, &c. .... | 100    |

\$11,955

|                                             |        |
|---------------------------------------------|--------|
| Labour: superintendent at \$4 per day ..... | \$4.00 |
| " three squads of men, 8 hours each....     | 7.00   |

\$11.00

Output of gross carbide in one day of 24 hours .... 2,000 lbs.

Materials, carbon for upper electrodes at 6 cents per pound .....

\$0.86

Coke from the Pocohontas Mines, Va., \$1.50 per ton

f.o.b. Cost delivered, \$4.55 per ton. Daily consumption, 2,000 pounds  $\times$  1.125 = 2,250

pounds .....

\$5.119

Lime from Carson Lime Company, of Riverton, Va.,

about \$1.75 per ton f.o.b.; average cost delivered, \$6.30 per ton. Daily consumption, 2,000 lbs  $\times$

1.335 = 2,670 pounds.....

\$8.411

\$14.390

|                                                                  |         |
|------------------------------------------------------------------|---------|
| Materials per day and per ton of gross carbide .....             | \$14.39 |
| Labour, per day and per ton of gross carbide.....                | 11.00   |
| Water power, 1,229 $\times$ $\frac{5}{100}$ .....                | 3.37    |
| Petty stores, waste, &c., \$1.50 per annum .....                 | 0.41    |
| Taxes, at \$100 per annum.....                                   | 0.274   |
| Interest on investment at 5%, \$11,955 .....                     | 1.638   |
| Depreciation and repairs, 5% on electric plant and turbine ..... | 1.218   |
| 6% on countershafting, building, rolls, and crusher ..           | .446    |
| 20% on furnaces.....                                             | 0.21    |

\$32.767

Our estimate, therefore, of the cost of producing calcium carbide at Spray, by working the furnaces 365 days a year and 24 hours a day, yielding on the average one ton of 2,000 pounds gross carbide a day, is \$32.767 per ton. Of this amount, \$14.39 is for material. The freight charges on lime and coke are heavy at Spray, and add materially to the cost.

The nett carbide in our tests gave an average yield of 4.926 cubic feet of moist acetylene gas per pound, making an average yield of 4.696 cubic feet of moist acetylene per pound of gross carbide. Pure calcium carbide should yield theoretically approximately 6 cubic feet of gas per pound, when saturated with aqueous vapour at 60° Fahrenheit, so that the nett carbide averaged only 82.1%, and the gross carbide only 78.26% of the theoretical yield. The acetylene yielded, however, was practically pure.

In conclusion, we desire to express our thanks to Major J. T. Morehead for his courtesy in placing his entire plant at our disposal during our tests and for his aid in the investigation; as also for that of Dr. G. de Chalmot, the chemist in charge.

(To be continued.)

## Correspondence.

\* \* We do not hold ourselves responsible for the opinions expressed by our correspondents.

### ANALYSTS AND ADVERTISING.

(To the Editor of the Chemical Trade Journal.)

SIR,—Reading in an agricultural contemporary the advertisement of a chemist, in which the fees for butter and milk analyses are respectively set down at 5s. and 3s. 6d., I think there is some need to enter a protest against the course of the Institute of Chemistry in seeking to induce its members to abstain from advertising.

Taking a common sense view of the question, there is no disguising the fact that outsiders gain the direct advantage in making themselves prominent before the public, whilst under the ban of so-called etiquette the members of the Institute are asked to preserve themselves as unknown chemists. Why this? Is the Institute going to provide its members with appointments or practices?

Looking more closely at the question, the majority of the members are work's chemists, having no need to advertise, neither have public analysts, but in the case of analysts practising professionally in the strict sense, the matter is widely different, and the question of advertising becomes of serious import.

The rewards of a chemist thus pursuing his profession depends largely upon the call in supplementary services as a "skilled specialist," therefore firms require to know this individual, but the Institute says that it is discreditable for this chemist to let the firms know of his existence; for that is exactly what the ban means.

It is to the best interests of trade that "analytical specialists" should advertise themselves, because those who have not penetratively studied and practised particular analyses, cannot possibly put the manufacturer in the best position in analytical work.

I have seen many instances of this in the analyses of fertilizers, crude determinations of phosphoric acid being issued, and which, in point of fact, are but traps for the trade to pay for in deficiencies that are afterwards shown in the hands of a "real specialist."

Some years ago I suggested to the secretary of the Institute that it should identify its specialists, and issue a circular list of the members to the firms. Consideration was promised, but the matter ended with the promise.

I would add that the Institute can have no legal power over its members on the question of advertising, as no such power exists in the Incorporated Law Society. The free-born right of every Englishman to advertise is still intact and likely to be so. It is merely a question of usage, but such a thing is quite inconsistent in the analytical profession, the circumstances of practice being widely different.—Yours, &c.,

ALFRED FIRBY, F.I.C.,

10, Infirmary-street, Leeds.



## Trade Notes.

**PETROLEUM FATALITY.**—Last week a little boy named Clarke, living in South Molton-street, Plymouth, was burnt to death through a petroleum lamp overturning.

**PERSONAL.**—The will of Mr. John Clarkson Major, the well-known chemical manufacturer of Wolverhampton, who died on December 21st last, has just been proved. The personality is sworn at £56,414. gross and £49,983. net.

**AMELIA NITRATE DEBENTURES.**—It is announced that the debentures of the issue of £250,000. five-and-a-half per cent. first mortgage debentures of the Amelia Nitrate Company, Ltd., will be ready for delivery on July 1st next, at the counting house of Messrs. J. Henry Schröder and Co., in exchange for the script certificates.

**COCOA DRYING MACHINERY.**—A great deal of attention has been given in recent years in Dutch Guiana to cocoa-drying machinery. Various systems have been tried experimentally. A manufacturer with a good, simple, and economical system might find some buyers in the market.

**THE KELVIN JUBILEE.**—The first of the series of functions in celebration of the jubilee of Lord Kelvin as Professor of Natural Philosophy in the University of Glasgow was held last Monday night. It took the form of a conversazione in the College buildings, Gilmore-hill, Glasgow. There was a brilliant assemblage, including distinguished visitors from all parts of the world. The company were received by the members of the Senate of the University and the Lord Provost and magistrates. Lord and Lady Kelvin were seated on a dais in the spacious Bute-hall, and received the congratulations of the numerous guests. A special feature of the Conversazione was an exhibition of Lord Kelvin's principal inventions in various departments of applied science.

## Market Reports.

### TAR AND AMMONIA PRODUCTS.

Benzol is firm at 2s. 9d. for prompt 90's, and 2s. 8d. July-December; 50.90's 2s. 4½d. prompt, and 2s. 3d. forward. Other products are about back to their former level, with crude (60%) carbolic at 2s. 2d.; crystals (40%) 7d. Solvent naphtha is quoted 1s. 3d. and crude 8d. Pitch 32s. to 32s. 6d., f.o.b., East Coast.

Sulphate of ammonia remains dull, and prices show no improvement. There is very little offering, so that buyers are more willing to take what parcels are obtainable. London outside makes are quoted £8. 2s. 6d., Liverpool £8. 2s. 6d., Hull £8., and Leith £7. 17s. 6d., all prompt.

### MISCELLANEOUS CHEMICAL MARKET.

In the alkali trade business doing is only moderate in quantity, and prices, generally, are unchanged. Alkali, 58%, remains at £3 7s. 6d., bags, f.o.r., makers' works. Leblanc ash, 1d. to 1¼d. in casks, f.o.b. For caustic soda there is an average amount of business doing, and prices remain at former quotations, viz.:—F.o.b. Liverpool, 77%, £9. 7s. 6d.; 74%, £8. 7s. 6d.; 70%, £7. 7s. 6d.; 60%, £6. 7s. 6d. per ton, 10-ton lots and upwards. Liquid caustic soda is finding more general outlet for home trade, at £4. for 90° Tw., f.o.r., makers' works. Bicarbonate steady, and in good request, at £6. 10s., f.o.b. Soda crystals quiet at 35s., bags, f.o.r. For bleaching powder there is only moderate inquiry—price, £6. 15s., f.o.r., and £6. 15s. to £7., f.o.b. Recovered sulphur firmer, at £3. 15s., f.o.r., makers' works. Chlorates of potash and soda unchanged, at 4½d. and 6d. per lb. respectively. Brown acetate of lime, £4. c.i.f., with little demand. White powdered arsenic remains firm, £23. to £23. 10s. spot delivery, f.o.r., Garston. Sulphate of copper lower, £17. 15s. to £18., f.o.b. For aniline oil and salt prices have considerably advanced; pure salt now quoted at 8d., and oil 8¼d. per lb. Nitrate of soda steady, at 8s. per cwt. Potash, caustic, and carbonate continue in good request, and prices are unchanged. Yellow prussiate of potash, 6¼d. to 7d. per lb.

### THE METAL MARKETS.

**LONDON, WEDNESDAY.**—Pig iron, dull: Scotch warrants closed at 46s. 6d.; Middlesbrough, 37s. 4d. cash, and hematite, 47s. 4½d. Copper, weak: Chili bars, G.O.B.'s and G.M.B.'s, closed at £49. to £49. 5s. cash, and £49. 1s. 3d. to £49. 6s. 3d. three months. Tin, steady: Straits closed at £60. 15s. to £61. 5s. cash, and £61. 5s. to £61. 15s. three months; Australian, £62. 5s. English ingots, £65. Lead, steady: Spanish, £10. 18s. 9d. to £11.; English, £11. 2s. 6d.; Silesian spelter, ordinary, £18. 5s. Nickel, 1s. 2d. Antimony, £30. 5s. Quicksilver: First hands, £6. 10s.;

second hands, £6. 9s. Copper shares, dull: Cape, 2½ to 2¾; Copiapo, 2½ to 2¾; Libiola, 2½ to 3½; Mason and Barry, 3½ to 3¾; Rio Tinto, 24½ to 24¾; Thaisis, 5½ to 6½.

**GLASGOW, WEDNESDAY.**—Market flat, with small business. Scotch done at 46s. 6½d. and 46s. 5½d. cash, also at 46s. 7½d. and 46s. 7d. one month; closing with buyers at 46s. 6d. cash, sellers ask 46s. 6½d. Cleveland closes with buyers at 37s. 4d. cash, sellers ask 37s. 5d. Cumberland hematite done at 47s. 4½d. cash; closing with buyers at 47s. 4½d. cash, sellers ask 47s. 5d. Middlesbrough hematite closes with buyers at 44s. 8d. cash, sellers ask 44s. 10½d.

### WEST OF SCOTLAND CHEMICALS.

GLASGOW, TUESDAY.

After despatch of report last week, sulphate of ammonia took unmistakably to the down grade, and by the close of the week £7. 7s. 6d. prompt had been taken. This is now the price, but there is very little passing, and news from the continent is not of a nature to assist recovery. Forward business is talked of at about 10s. higher, but no actual business at that or any other figure has transpired. Reports as to the ordinary chemicals are slightly more favourable. Prices mostly unaltered, but a little firmer in tone. Mineral oils and paraffins are unchanged, and as before very slow of movement, this being the usual dead time of the season. Reports of enlarged petroleum production in America, by the discovery of new fields, may, if confirmed, affect the price of the native burning oil in the downward direction. This would be very bad for the industry.

Chief prices current are:—Soda crystals, £2. 2s. 6d., nett, Tyne; soda ash, 48/52°, £4. to £4. 15s. nett, Tyne; white alkali, 48/52°, £4. 10s. to £5. nett, Tyne; alum in lump, £5. to £5. 5s. nett, Glasgow; caustic soda, white, 74° £8. 7s. 6d., 70/72° £7. 7s. 6d., 60/62° £6. 7s. 6d., and cream 60/62° £6. 7s. 6d., all nett, Liverpool; bleaching powder, £6. 17s. 6d. nett, Tyne; saltcake, 23s. 6d.; borax, English, refined, £20., and boracic acid, £30. nett, Glasgow; bicarbonate of soda, 5-cwt. casks, £6. 10s., and 1-cwt. casks £6. 15s. nett, Liverpool; bichromate of potash, 4½d. nett, for Scotch and English deliveries (for export, 4½d. nett, f.o.b. Glasgow); bichromate of soda, 3¾d. nett, for Scotch and English deliveries (for export, 3½d. nett, f.o.b. Glasgow); chlorate of potash, 4½d. less 5%, any port; nitrate of soda, 7s. 10½d. to 8s. 1½d.; sulphate of ammonia, £7 17s. 6d. prompt, f.o.b., Leith; sal-ammoniac, first and second white, £37. and £35. nett, any port; sulphate of copper, £19. less 5%, Liverpool; paraffin scale, hard, 1½d. to 1¾d., and soft, 1¾d. to 2d. per lb.; paraffin wax, 120° semi-refined, 2½d. to 2¾d. per lb.; paraffin spirit (naphtha), 7d. per gallon; paraffin oil (burning) No. 1, 6¼d., and crystal, 6½d., at Glasgow and other big centres, for Scotch buyers (English sales ½d. to ¾d. lower); ditto (lubricating) 865° £4. 10s. to £5., 885° £5. 10s. to £6., and 890/895° £6. to £6. 10s. Week's imports of sugar at Greenock were nil.

### TYNE CHEMICAL REPORT.

TUESDAY.

There is no alteration to report in the chemical market. Business is quiet, with only a moderate demand. Soda crystals, £2. 2s. 6d. per ton, gross weight, locally. Sulphur rather scarcer at £3. 17s. 6d. per ton. Other quotations as under:—

Bleaching powder, softs, £7. 5s. per ton, nett; hards, £7. 10s. per ton, nett; caustic soda, 76/77%, £9. 5s. per ton, nett; do., 70%, £7. 15s. per ton, nett; recovered sulphur, 2 cwt. bags, £3. 17s. 6d. per ton, nett; soda ash, 48%, £4. per ton, nett; do., 50%, £4. 3s. 4d. per ton, nett; do., 52%, £4. 6s. 8d. per ton, nett; alkali, 36%, £2. 15s. per ton, nett; white alkali, 48%, £4. 10s. per ton, nett; do., 50%, £4. 15s. per ton, nett; do., 52%, £5. per ton, nett; hyposulphite of soda, 5-7 cwt. casks, £6. 5s. per ton, nett; do., 1 cwt. kegs, £7. per ton, nett; silicate of soda, 75° Tw., £2. 12s. 6d. per ton, nett; do., 100° Tw., £3. per ton, nett; do., 140° Tw., £3. 7s. 6d. per ton, nett; soda crystals, casks, £2. 2s. 6d. per ton, gross weight; do., 2 cwt. bags, £2. 2s. 6d. per ton, nett weight; chlorate of potash, 5d. per lb., less 6%; pearl hardening, £3. per ton, nett; pure white sulphate of alumina, £3. 17s. 6d. per ton, nett; blanc fixe, £7. 5s. per ton, nett; chloride of barium, refined crystals, £6. 15s. per ton, nett; do., 90/95%, crude calcined, £6. per ton, nett; sulphide of barium, crystals, £4. 15s. per ton, nett; carbonate of alumina, £30. per ton, nett; aluminate of soda, £30. per ton, nett.

**SALT.**—South Durham salt firm at 9s. per ton, f.o.b. Tees.

**COALS.**—With the exception of a better inquiry for steam coals, the market remains in much the same position. House, gas, and bunker coals are quiet, and in poor demand. Coke continues in good consumption, and firm at 15s. and 16s. per ton. Best Northumbrian steam, 8s. 6d. to 8s. 9d. per ton; second qualities, steam, 7s. 6d. to 7s. 9d. per ton; small steam, 3s. 9d. to 4s. per ton; gas coals, 6s. 3d. to 6s. 6d. per ton; bunker coals, unscreened, 6s. 3d. to 6s. 6d.; coke firm, 15s. 6d. to 16s. per ton.



## LIVERPOOL OIL AND COLOUR MARKET.

WEDNESDAY.

**OILS.**—Palm oil is very steady, and there is only a limited quantity offering. Business is rather slow in consequence. Olive is firm, with a moderate inquiry. Prices range from £28. to £35. per tun, according to quality. Linseed is rather quiet. Liverpool makes in export casks are quoted 19s. to 20s. per cwt. Cottonseed is steady, without anything fresh to report. Liverpool refined still stands at 16s. 3d. to 17s., and American, 16s. 9d. to 17s. per cwt. Castor oil is firm, with plenty doing on spot in good seconds Calcutta at 2½d., while first pressure French is moving well at 2½d. per lb. Tallow is in very small demand, holders being firm at recent values. Res'n continues as firm as ever, but the level of prices is beginning to tell on the demand. Spirits of turpentine are easier, spot value now being 20s. 6d. to 20s. 9d. per cwt. Petroleum, quiet: American, 6½d. to 7½d., and Russian refined 5½d. per gallon.

**COLOURS.**—Prices are steady, and practically without change. Ochres: Oxfordshire, common, £10., medium, £12., best, £15. Derbyshire, common, 40s.; medium, 50s., best, 60s.; Welsh, best, 90s., seconds, 50s., and common, 18s.; Irish, Devonshire, 40s. to 45s.; French, J.C., 65s. Umber: 40s. to 45s. White lead, £16. Red lead unchanged. Venetian red, £6. to £10. Cobalt: Prepared oxide, 9s. 9d.; black, 9s.; blue, 6s. Oxide of iron: Common, £7.; medium, £10.; finest, £20. Zinc oxide, £22. 10s. to £25.

## REPORT ON MANURE MATERIAL.

The manure season may be considered as now at an end, and, it is to be feared, it cannot be considered to have been altogether satisfactory. The promises of early spring have not been fulfilled from a manufacturers' point of view, and the dry weather of the past two months has no doubt been largely responsible for the falling off. The increased use of nitrate of soda and sulphate of ammonia has, too, been prejudicial to the interests of manure manufacturers; so that in the aggregate it will be found that large stocks of manures and material will have to be carried forward, and, as a consequence, there is no great haste to avail of the exceptionally low prices now current of all descriptions of material. The quotations for mineral phosphates are unchanged, but it is reported that further sales of South Carolina rock have been made at 5d. per unit, c.i.f., good United Kingdom ports. There is nothing fresh to report in River Plate bones. The market for Bombay bone meal remains firm, and there would be buyers of June-July shipments at £3. 12s. 6d., ex quay, Liverpool. For August-September shipment £3. 15s. per ton is required, but so far buyers will not pay the price. Prices asked for crushed Kurrachee bones preclude business. Nitrate of soda is weak, at 7s. 9d. per cwt for ordinary, and 7s. 10½d. for refined quality. There is nothing special to report in miscellaneous material, this being for the most part neglected.

## HULL PAINT, OIL, AND COLOUR REPORT.

TUESDAY.

The demand does not keep pace with the supply, consequently values in both linseed and cotton oils continue falling. The seed-crushing mills are, many of them, closed or working short time. The import of linseed during the week has been 14 559 quarters, viz., Buenos Ayres, 13,246 quarters; St. Petersburg, 1,150 quarters; Riga, 150 quarters; and Harlingen, 13 quarters. Linseed oil is about 7s. 6d. per ton lower on the spot, 16s. 10½d. naked having been accepted; July-August offer at 17s. 4½d., and 17s. 6d. taken for September-December; January-April, 17s. 9d.; boiled and refined, £1. to £2. per ton extra. Export for the week, 2,820 cwt. The import of cottonseed during the week has been 4,350 tons, viz., from Alexandria. Refined cotton oil is flat, 14s. 1½d., naked, having been accepted on the spot; July-August quoted, 14s. 4½d.; and November-April, 14s. 10½d.; casks £1. and ordinary barrels 30s. per ton extra. Export of refined oil for the week, 5,300 cwt. American Turpentine, 22s. 3d. per cwt. Castor oil, 2½d. per lb. for first pressure, and firm thereat. Olive oil quiet. Cod oil, £17. to £19. per ton. Herring oil, £14. Brown wool grease, £8. per ton. Boiled siccative oil, £12. per ton. American cotton oil soap, 70% fatty acids, £10. 5s. per ton. Locomotive Grease, £10. 10s. per ton.

**CAKES.**—Linseed cakes steady: 95% pure, £5. 10s.; Russians, £5. 7s. 6d.; Americans, £5. Oilcakes, £4. 15s. per ton. Cotton cakes unchanged: Best makes, £3. 17s. 6d.; seconds, £3. 12s. 6d. Black Sea rape cakes, £2. 5s. per ton.

**PAINTS.**—Makers continue active, supplying the demands of the home market, with some inquiries for abroad. White and red lead in good demand, and prices unchanged. Dry mineral colours, £3. 10s. to £8. Ultramarines, 3d. to 8d. per lb. Black blue, red oxide, venetian red,

Brunswick greens and yellow ochre paints from £11. per ton. Ready mixed paints, best brands, in good demand, from £24. per ton. Paint remover, 25s. per cwt. Imperial black varnish in good demand, and quoted £5. 10s. per ton., in batrels. Oak varnish, from 5s. 6d. per gallon.

## New Companies.

**Commercial Ozone Syndicat, Ltd.**—CAPITAL £20,000, in shares of £1. each. This company has been formed to purchase certain patents from G. V. Yarnold, and to trade as metallurgists, smelters, distillers, wax chandlers, and bleachers. The subscribers to the memorandum of association are:—C. P. Bennett, 27, Lombard-street, E.C., merchant; J. Cruddas, Holmwood, Brentwood, engineer; W. J. Engledue, Petersham-place Byfleet, colonel, retired; W. D. Gooch, 2, Willes-road, N.W., C.E.; G. Hume, 22, Budge-row, E.C., director of companies; H. E. A. Johnson, 48, The Gardens, Peckham Rye, gentleman; F. Rushton, 14, New Inn, Strand, solicitor.

**Marico (Transvaal) Saltpetre Co., Ltd.**—CAPITAL £125,000. This company has been formed to acquire mining rights and to develop mines in Marico District, South Africa. The subscribers to the memorandum of association are:—H. E. McCardle, 35, Highbury Crescent West, N., clerk; J. K. White, 60, Haymarket, S.W., solicitor; E. T. Johnson, 25, Whiteley-road, Upper Norwood, gentleman; R. E. Smith, 62, Willoughby-lane, Tottenham, clerk; E. W. Clements, 52, Queen Victoria street, E.C., clerk; H. de Montan, 54, Lordship-lane, Wood Green, engineer; W. Day, 52, Queen Victoria-street, E.C., accountant.

**Red Cross Germicide Co., Ltd.**—CAPITAL £20,000, in shares of £1. each. This company has been formed to trade as manufacturers of disinfecting and antiseptic products, distillers, chemists, and perfumers. The subscribers to the memorandum of association are:—S. Hardy, Eldon Buildings, Eldon-street, E.C., gentleman; E. C. Powell, 7, Selwood Place, Onslow Gardens, S.W., accountant; J. H. H. Garbutt, 95, The Rye, Peckham, clerk; C. F. Richardson, 123, Mount View-road, Strood Green, C.A.; W. F. Fowle, 3, St. James's-road, Stratford, E., accountant; T. G. Warner, Kingsclere, Walton-on-Thames, merchant; S. Wesley, 60, Watling-street, E.C., gentleman.

**Hermite International Electric Sanitation Co., Ltd.**—CAPITAL £300,000, in shares of £1 each. This company has been formed to adopt an agreement between Messrs Hermite, Patterson, and Cooper, to work the Hermite patents for electrolytic bleaching, sewage purification, &c. The subscribers to the memorandum of association are:—E. Hermite, 68, Victoria-street, S.W., electrical engineer; C. F. Cooper, 68, Victoria-street, S.W., C.E.; F. D. Cooper, 29, Gracechurch-street, E.C., merchant; S. Castle, 14, Southampton-street, Bloomsbury, solicitor; H. W. Kirby, F.C.A., 19, Birch-lane, E.C.; G. D. Craven, 28, Fenchurch-street, E.C., tea broker; A. E. Cooper, Norbiton Lodge, Kingston-on-Thames, chemist.

**Hoyle, Robson, Barnett, and Co., Ltd.**—CAPITAL £40,000, in shares of £10 each. This company has been formed to acquire the business of Messrs. E. and F. Barnett, at Newcastle-on-Tyne and Gateshead, and to trade as manufacturers of and dealers in paints, colours, varnishes, oils, tar, pitch, and resin. The subscribers to the memorandum of association are:—E. G. Barnett, Stockfield, Northumberland, manufacturer; F. P. Barnett & Co., Stockfield, Northumberland, manufacturers; Mrs. A. Barnett, Stockfield, Northumberland; W. Barnett, King's Royal Rifle Corps, Newcastle, lieutenant; G. Sneath, 3, St. Paul's Terrace, Newcastle, manager; W. T. Atkin, 9, Manor-road, Sidcup, Kent, agent; W. Henderson, Cromwell-road, Bill Quay-on-Tyne, manager.

**P. H. Muntz and Co., Ltd.**—CAPITAL £45,000, in £10 shares. This company has been formed to acquire the business of P. H. Muntz and Co., West Bromwich, and to trade as metal rollers, refiners, &c. The subscribers to the memorandum of association are:—P. M. Muntz, Surbiton, manufacturer; R. W. Rucker, 85, Gracechurch-street, E.C., merchant; F. C. Milford, 85, Gracechurch-street, E.C., broker; G. A. Davis, 8, Leadenhall-street, E.C., merchant; H. Attlee, 10, Billiter-square, E.C., solicitor; E. W. Reems, 85, Gracechurch-street, E.C., clerk; W. H. Rogers, 85, Gracechurch-street, E.C., clerk.

**Singer Soap, Ltd.**—CAPITAL £10,000., in £1. shares. This company has been formed to manufacture and sell soaps, tallow, glycerine, candles, oils, starch, &c. The subscribers to the memorandum of association are:—G. Singer, 33, Victoria Grove, Birmingham, tailor; E. T. Baker, Rotton Park-road, Birmingham, manufacturer; P. W. Cawley, Barford-road, Birmingham, clerk; G. Bowdon, 8, Soho-street, Smethwick, architect; Mrs. E. Bowdon, 8, Soho-street, Smethwick; B. H. Trotman, City-road, Birmingham, art master; W. C. Gelbard, Oliver-road, Birmingham, cashier; Mrs. F. Gebhard, Oliver-road, Birmingham.



## IMPORTS OF CHEMICAL PRODUCTS

AT  
THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON.

*Week ending June 6th.*

|                                                               |  |                                       |  |                                                  |  |                                       |  |                                                    |  |                                           |  |                                |  |
|---------------------------------------------------------------|--|---------------------------------------|--|--------------------------------------------------|--|---------------------------------------|--|----------------------------------------------------|--|-------------------------------------------|--|--------------------------------|--|
| <b>LONDON.</b><br><i>Week ending June 6th.</i>                |  | Germany, 4<br>Holland, 125<br>30      |  | L. & I. D. Jt. Co.<br>T. H. Lee<br>Typeke & King |  | 250 250<br>74 330                     |  | Pearce, Pelly<br>& Co.<br>L. Norman &<br>Co., Ltd. |  | <b>Pyrites</b> —<br>Portugal, 920 t.      |  | Mason & Barry                  |  |
| <b>Acetic Acid</b> —<br>Holland, 50 pks.                      |  | A. & M.<br>Zimmermann                 |  | <b>Copperas</b> —<br>Holland, 10 bgs.            |  | A. & M. Zimmermann                    |  | France, 200<br>Germany, 25                         |  | 200 200<br>203                            |  | Deering &<br>Robottom          |  |
| " 20<br>" 100                                                 |  | H. Wallace & Co.<br>R. W. Greff & Co. |  | <b>Cream of Tartar</b> —<br>Italy, 21 cks.       |  | Howard & Sons                         |  | U. States, 700                                     |  | 750                                       |  | Fellows, Morton<br>& Co.       |  |
| <b>Acetone</b> —<br>Germany, 1 dm.                            |  | T. H. Lee                             |  | France, 35                                       |  | B. & F. Wf. Co.                       |  | " 200                                              |  | 1,200                                     |  | Deering &<br>Robottom          |  |
| Belgium, 2 drs.                                               |  | J. Harrison                           |  | " 5                                              |  | W. C. Bacon & Co.                     |  | " 3                                                |  | C. Atkins & Nibet                         |  | Kirkpatrick & Co.              |  |
| <b>Alkali</b> —<br>France, 40 c.                              |  | J. Barber & Co.                       |  | Holland, 10                                      |  | <b>Dextrine</b> —<br>Holland, 50 bgs. |  | J. Barber & Co.                                    |  | 16 pks. Pronk, Davis<br>& Co.             |  | " 200<br>" 100                 |  |
| <b>Alum</b> —<br>Germany, 10 cks.                             |  | T. H. Lee                             |  | Germany, 16 pks. Pronk, Davis<br>& Co.           |  | " 200<br>" 100                        |  | Vokins & Co.<br>J. Barber & Co.                    |  | <b>Dyestuffs</b> —<br>Spain, 38 cks.      |  | Thames S. T.<br>& L. Co., Ltd. |  |
| <b>Aluminium</b> —<br>Belgium, 4 t.                           |  | Krayner, Back & Co.                   |  | Italy, 1,444 bgs.                                |  | R. Jacob & Sons                       |  | France, 1,114                                      |  | J. Forsey<br>Thames S. T.<br>Tug & L. Co. |  | " 90                           |  |
| <b>Ammonium Chloride</b> —<br>Holland, 31 pks.                |  | H. Lorenz                             |  | <b>Cochineal</b><br>Canaries, 15 bgs.            |  | W. M. Smith & Sons                    |  | E. Indies, 105 bgs.                                |  | Hicks, Nash & Co.                         |  | France, 14 cks.                |  |
| <b>Ammonium Phosphate</b> —<br>Holland, 80 bgs.               |  | H. & E. Albert                        |  | U. States, 100 bxs.                              |  | Skilbeck<br>Brs. & Co.                |  | Austria, 200                                       |  | Boutcher,<br>Mortimore & Co.              |  | France, 90                     |  |
| <b>Antimony Ore</b> —<br>Portugal, 33 t.                      |  | J. Bamber                             |  | France, 41                                       |  | Pronk, Davis & Co.                    |  | U. States, 305 bks.                                |  | L. & I. D. Jt. Co.                        |  | Germany, 3                     |  |
| <b>Asbestos</b> —<br>Germany, 669                             |  | Craven & Co.                          |  | France, 50                                       |  | B. & F. Wf. Co.                       |  | U. States, 41                                      |  | Pronk, Davis & Co.                        |  | Singapore, 305 bks.            |  |
| " 44                                                          |  | T. H. Lee                             |  | U. States, 41                                    |  | Pronk, Davis & Co.                    |  | France, 50                                         |  | B. & F. Wf. Co.                           |  | Germany, 3                     |  |
| Italy, 180                                                    |  | J. Barber & Co.                       |  | France, 50                                       |  | B. & F. Wf. Co.                       |  | U. States, 41                                      |  | Pronk, Davis & Co.                        |  | Singapore, 305 bks.            |  |
| <b>Barytes</b> —<br>Germany, 40 cks.                          |  | Blundell, Spence<br>& Co.             |  | France, 50                                       |  | B. & F. Wf. Co.                       |  | U. States, 41                                      |  | Pronk, Davis & Co.                        |  | Singapore, 305 bks.            |  |
| Belgium, 92                                                   |  | T. & W. Farmiloe                      |  | France, 50                                       |  | B. & F. Wf. Co.                       |  | U. States, 41                                      |  | Pronk, Davis & Co.                        |  | Singapore, 305 bks.            |  |
| Holland, 57                                                   |  | D. Storer & Sons                      |  | France, 50                                       |  | B. & F. Wf. Co.                       |  | U. States, 41                                      |  | Pronk, Davis & Co.                        |  | Singapore, 305 bks.            |  |
| " 38                                                          |  | W. Harrison & Co.                     |  | France, 50                                       |  | B. & F. Wf. Co.                       |  | U. States, 41                                      |  | Pronk, Davis & Co.                        |  | Singapore, 305 bks.            |  |
| " 58                                                          |  | Burrell & Co.                         |  | France, 50                                       |  | B. & F. Wf. Co.                       |  | U. States, 41                                      |  | Pronk, Davis & Co.                        |  | Singapore, 305 bks.            |  |
| Belgium, 83 brls.                                             |  | W. Harrison<br>& Co.                  |  | France, 50                                       |  | B. & F. Wf. Co.                       |  | U. States, 41                                      |  | Pronk, Davis & Co.                        |  | Singapore, 305 bks.            |  |
| " 68 35                                                       |  | J. L. Lyon<br>& Co.                   |  | France, 50                                       |  | B. & F. Wf. Co.                       |  | U. States, 41                                      |  | Pronk, Davis & Co.                        |  | Singapore, 305 bks.            |  |
| Holland, 60                                                   |  | " "                                   |  | France, 50                                       |  | B. & F. Wf. Co.                       |  | U. States, 41                                      |  | Pronk, Davis & Co.                        |  | Singapore, 305 bks.            |  |
| <b>Bleaching Powder</b> —<br>Holland, 88 cks.                 |  | J. M. Steel & Co.                     |  | France, 50                                       |  | B. & F. Wf. Co.                       |  | U. States, 41                                      |  | Pronk, Davis & Co.                        |  | Singapore, 305 bks.            |  |
| <b>Bromide of Iron</b> —<br>Germany, 15 cks.                  |  | A. & M.<br>Zimmermann                 |  | France, 50                                       |  | B. & F. Wf. Co.                       |  | U. States, 41                                      |  | Pronk, Davis & Co.                        |  | Singapore, 305 bks.            |  |
| <b>Bromine</b> —<br>Germany, 20 cs.                           |  | A. & M.<br>Zimmermann                 |  | France, 50                                       |  | B. & F. Wf. Co.                       |  | U. States, 41                                      |  | Pronk, Davis & Co.                        |  | Singapore, 305 bks.            |  |
| <b>Camphor</b> —<br>Germany, 100 cs.                          |  | City Coml. Wf. Co.                    |  | France, 50                                       |  | B. & F. Wf. Co.                       |  | U. States, 41                                      |  | Pronk, Davis & Co.                        |  | Singapore, 305 bks.            |  |
| " 100                                                         |  | R. Warner & Co.                       |  | France, 50                                       |  | B. & F. Wf. Co.                       |  | U. States, 41                                      |  | Pronk, Davis & Co.                        |  | Singapore, 305 bks.            |  |
| " 190                                                         |  | H. A. Litchfield & Co.                |  | France, 50                                       |  | B. & F. Wf. Co.                       |  | U. States, 41                                      |  | Pronk, Davis & Co.                        |  | Singapore, 305 bks.            |  |
| " 119 pks.                                                    |  | Prop. Hay's Wf.                       |  | France, 50                                       |  | B. & F. Wf. Co.                       |  | U. States, 41                                      |  | Pronk, Davis & Co.                        |  | Singapore, 305 bks.            |  |
| <b>Caoutchouc</b> —<br>Thursdays, 11 c.                       |  | McIlwraith,<br>McEachern & Co.        |  | France, 50                                       |  | B. & F. Wf. Co.                       |  | U. States, 41                                      |  | Pronk, Davis & Co.                        |  | Singapore, 305 bks.            |  |
| France, 176                                                   |  | Stiebel Brs.                          |  | France, 50                                       |  | B. & F. Wf. Co.                       |  | U. States, 41                                      |  | Pronk, Davis & Co.                        |  | Singapore, 305 bks.            |  |
| U. States, 4                                                  |  | Prop. Bull Wf.                        |  | France, 50                                       |  | B. & F. Wf. Co.                       |  | U. States, 41                                      |  | Pronk, Davis & Co.                        |  | Singapore, 305 bks.            |  |
| Germany, 94                                                   |  | Craven & Co.                          |  | France, 50                                       |  | B. & F. Wf. Co.                       |  | U. States, 41                                      |  | Pronk, Davis & Co.                        |  | Singapore, 305 bks.            |  |
| Aden, 18                                                      |  | L. & I. D. Jt. Co.                    |  | France, 50                                       |  | B. & F. Wf. Co.                       |  | U. States, 41                                      |  | Pronk, Davis & Co.                        |  | Singapore, 305 bks.            |  |
| Germany, 180                                                  |  | W. Balchin                            |  | France, 50                                       |  | B. & F. Wf. Co.                       |  | U. States, 41                                      |  | Pronk, Davis & Co.                        |  | Singapore, 305 bks.            |  |
| E. Indies, 1                                                  |  | Hale & Son                            |  | France, 50                                       |  | B. & F. Wf. Co.                       |  | U. States, 41                                      |  | Pronk, Davis & Co.                        |  | Singapore, 305 bks.            |  |
| Zanzibar, 49                                                  |  | Clarke & Smith                        |  | France, 50                                       |  | B. & F. Wf. Co.                       |  | U. States, 41                                      |  | Pronk, Davis & Co.                        |  | Singapore, 305 bks.            |  |
| Madagascar, 25                                                |  | Prop. Bull Wf.                        |  | France, 50                                       |  | B. & F. Wf. Co.                       |  | U. States, 41                                      |  | Pronk, Davis & Co.                        |  | Singapore, 305 bks.            |  |
| Zanzibar, 50                                                  |  | L. & I. D. Jt. Co.                    |  | France, 50                                       |  | B. & F. Wf. Co.                       |  | U. States, 41                                      |  | Pronk, Davis & Co.                        |  | Singapore, 305 bks.            |  |
| U. States, 15                                                 |  | " "                                   |  | France, 50                                       |  | B. & F. Wf. Co.                       |  | U. States, 41                                      |  | Pronk, Davis & Co.                        |  | Singapore, 305 bks.            |  |
| <b>Carbonic Acid</b> —<br>Germany, 50 pks.                    |  | Krayner Back<br>& Co.                 |  | France, 50                                       |  | B. & F. Wf. Co.                       |  | U. States, 41                                      |  | Pronk, Davis & Co.                        |  | Singapore, 305 bks.            |  |
| Holland, 32                                                   |  | J. Owen                               |  | France, 50                                       |  | B. & F. Wf. Co.                       |  | U. States, 41                                      |  | Pronk, Davis & Co.                        |  | Singapore, 305 bks.            |  |
| <b>Castor Oil</b> —<br>Belgium, 117 brls.                     |  | Fuerst Brs.                           |  | France, 50                                       |  | B. & F. Wf. Co.                       |  | U. States, 41                                      |  | Pronk, Davis & Co.                        |  | Singapore, 305 bks.            |  |
| E. Indies, 75 cs.                                             |  | Co-op. Ltge. Association<br>Ld.       |  | France, 50                                       |  | B. & F. Wf. Co.                       |  | U. States, 41                                      |  | Pronk, Davis & Co.                        |  | Singapore, 305 bks.            |  |
| Italy, 5                                                      |  | W. G. Frith & Co.                     |  | France, 50                                       |  | B. & F. Wf. Co.                       |  | U. States, 41                                      |  | Pronk, Davis & Co.                        |  | Singapore, 305 bks.            |  |
| <b>Caustic Potash</b> —<br>France, 40 drs.                    |  | J. Knight & Sons                      |  | France, 50                                       |  | B. & F. Wf. Co.                       |  | U. States, 41                                      |  | Pronk, Davis & Co.                        |  | Singapore, 305 bks.            |  |
| " 85 c.                                                       |  | Petri Brs.                            |  | France, 50                                       |  | B. & F. Wf. Co.                       |  | U. States, 41                                      |  | Pronk, Davis & Co.                        |  | Singapore, 305 bks.            |  |
| " 50                                                          |  | F. W. Berk & Co.                      |  | France, 50                                       |  | B. & F. Wf. Co.                       |  | U. States, 41                                      |  | Pronk, Davis & Co.                        |  | Singapore, 305 bks.            |  |
| <b>Chemicals</b> ( <i>otherwise undes.</i> )—<br>Germany, 118 |  | F. Boehm                              |  | France, 50                                       |  | B. & F. Wf. Co.                       |  | U. States, 41                                      |  | Pronk, Davis & Co.                        |  | Singapore, 305 bks.            |  |
| Holland, 15                                                   |  | J. Barber & Co.                       |  | France, 50                                       |  | B. & F. Wf. Co.                       |  | U. States, 41                                      |  | Pronk, Davis & Co.                        |  | Singapore, 305 bks.            |  |
| " 547                                                         |  | A. & M.<br>Zimmermann                 |  | France, 50                                       |  | B. & F. Wf. Co.                       |  | U. States, 41                                      |  | Pronk, Davis & Co.                        |  | Singapore, 305 bks.            |  |
| Belgium, 60                                                   |  | Société John<br>Cockerill             |  | France, 50                                       |  | B. & F. Wf. Co.                       |  | U. States, 41                                      |  | Pronk, Davis & Co.                        |  | Singapore, 305 bks.            |  |
| Denmark, 15                                                   |  | Sorensen & Co.                        |  | France, 50                                       |  | B. & F. Wf. Co.                       |  | U. States, 41                                      |  | Pronk, Davis & Co.                        |  | Singapore, 305 bks.            |  |
| Germany, 5                                                    |  | J. Barber & Co.                       |  | France, 50                                       |  | B. & F. Wf. Co.                       |  | U. States, 41                                      |  | Pronk, Davis & Co.                        |  | Singapore, 305 bks.            |  |
|                                                               |  |                                       |  |                                                  |  |                                       |  |                                                    |  |                                           |  |                                |  |



|            |                          |
|------------|--------------------------|
| 2,022      | Johnsen & Jorgensen      |
| 1,140 pks. | Phillipps & Graves       |
| 270        | Moreton Cox & Co.        |
| 1,389      | G. Rahn & Co.            |
| 265        | Tough & Henderson        |
| 388        | Henderson, Craig, & Co.  |
| 80         | "                        |
| 505        | E. J. & W. Goldsmith     |
| 1,264 bls. | "                        |
| 50 cks     | 150 brls. M. Ashby, Ltd. |
| 100        | Petri Bros.              |
| 95         | R. W. Greeff & Co.       |
| 60         | M. Ashby, Ltd.           |
| 30 brls.   | "                        |
| 13 cks.    | Stobbs Wilson, & Co.     |

**VERPOOL.**

Week ending June 4th.

|            |       |                                    |
|------------|-------|------------------------------------|
| Acid—      | am,   | 155 cs.                            |
| n—         |       | 27 cs.                             |
| am,        |       | 22 cks.                            |
| h,         |       | 250 bgs.                           |
| of Lime—   | asta, | 1,249 sks.                         |
| 04,        |       | 200 sks. F. Huth & Co.             |
| 180,       |       | 1,656 bgs.                         |
|            |       | 1,520 brls.                        |
| ious—      | 0,    | 16 bls. W. Brandts, Son & Co.      |
|            |       | 53 J. H. Schroder & Co.            |
| Oil—       |       | 60 cs. Evans, Sons & Co.           |
| am,        |       | 20 cks.                            |
| h,         |       | 2 1 cs.                            |
| ig,        |       | 1 bx.                              |
| eed Oil—   |       | 20 brls.                           |
| ans,       |       | 666                                |
| of Tartar— | ma,   | 5 pps. Sachse & Kleim              |
| ts—        |       | 57 cks.                            |
| ls         |       | 400 bgs.                           |
| Divi       |       | 400 Cunard S.S. Co., Ltd.          |
| ig,        |       | 400                                |
| acts       |       | 1 brl.                             |
| on         |       | 5 cs.                              |
| hac        |       | 50 bgs. J. Kitchin, Ltd.           |
| h,         |       | 674 4 bls.                         |
| am,        |       | 1 cs. Gunston, Sons & Co.          |
|            |       | 50 bgs. Haefner, Hilpert & Co.     |
| 200        |       | H. Tyrer & Co.                     |
| rg,        |       | 575                                |
| ork,       |       | 100 brls.                          |
|            |       | 300                                |
|            |       | 18 brls. D. M. Newman & Co.        |
| rg,        |       | 6 cks. 20 bgs. R. J. Francis & Co. |
|            |       | 3                                  |
|            |       | 11 brls.                           |
| also,      |       | 2 cs. J. T. Fletcher & Co.         |
| one—       |       | 2 crts.                            |
| p,         |       | 29 bgs. Animal Products Co.        |
| fe,        |       | 300 bgs. 150 brls.                 |
| e,         |       | 85 cks. R. J. Francis & Co.        |

**Paraffin Scale—**

New York, 290 brls. Thompson &amp; Bedford

**Potash—**

Montreal, 50 brls.

**Pumice Stone—**

Messina, 20 bgs.

Teneriffe, 1,260 sks.

**Pyrites—**

Huelva, 5,055 t. Matheson &amp; Co.

**Resin—**

Boston, 1,000 brls.

**Salt—**

Hamburg, 90 t. 435 cks. H. Tyrer &amp; Co.

**Soap—**

Boston, 1 brl.

Baltimore, 110

Alexandria, 4 bgs. E. &amp; J. Ardeb &amp; Co.

Bari, 204 cs.

**Starch—**

Rotterdam, 60 cs.

Antwerp, 40

Boston, 300 bgs. Strafford Brs. &amp; Co.

Hamburg, 76

H. Tyrer &amp; Co.

**Stearine—**

Antwerp, 10 cs. J. T. Fletcher &amp; Co.

New York, 5 hds.

**Tallow—**

Boston, 64 hds. 50 cs. Stolterfoht, Sons &amp; Co.

New York, 100

**Tartar—**

Hamburg, 4 cks.

Bordeaux, 18

Bari, 1

**Tartaric Acid—**

Bordeaux, 20 cks.

Bari, 8

**Treacle—**

Bordeaux, 6 pks. 1 cs.

**Turpentine—**

Trieste, 6 cs.

**Ultramarine—**

Hamburg, 7 cks.

**Waste Salt—**

Hamburg, 200 t.

**White Lead—**

Rotterdam, 25 cks.

Antwerp, 34

**Wood Pulp—**

Rotterdam, 123 bls.

Hamburg, 200 H. Tyrer &amp; Co.

**Zinc Oxide—**

Rotterdam, 50 cks.

Antwerp, 12 brls.

**Zinc White—**

Rotterdam, 10 cks.

**MANCHESTER.**

Week ending June 6th.

**Acetic Acid—**

Rotterdam, 51 blns.

**Aluminous Cake—**

Rotterdam, 48 cks.

**Barytes—**

Antwerp, 130 bgs.

**Chemicals (otherwise undescribed)**

Rotterdam, 29 cks.

Rouen, 24

**Colours—**

Paris, 3 cks.

Antwerp, 42 pks.

Hamburg, 1 14 cs.

Rotterdam, 24 3 78 brls.

Boulogne, 21 bxs. 6

**Copperas—**

Boulogne, 2 cks.

**Cream of Tartar—**

Rotterdam, 8 cks.

**Creosote Salts—**

Rotterdam, 4 brls.

**Dextrine—**

Rotterdam, 250 bgs.

**Dyestuffs—**

Alizarine

Rotterdam, 28 cks.

Extracts

Hamburg, 11 cks.

**'ndig—**

Rotterdam, 1 cht.

**Shumac**

Palermo, 100 bgs. 530 bls.

**Farina—**

Stettin, 1,330 bgs. Brown, Geveke, &amp; Co.

" 130

**Gelatine—**

Rouen, 16 cs.

**Glucose—**

Stettin, 25 cks.

**Glue—**

Rotterdam, 20 cs.

Antwerp, 3 cks. 30 bls.

Dieppe, 16

Rouen, 33 30

**Limestone—**

Antwerp, 1 crte.

**Mineral White—**

Fiume, 250 bgs.

**Minium—**

Rotterdam, 10 cks.

**Ochre—**

Treport, 48 cks.

**Pitch—**

Hamburg, 60 cks.

**Potash—**

Antwerp, 20 cks.

Hamburg, 4 cks.

**Potassium Permanganate—**

Hamburg, 3 cks.

**Potassium Sulphate—**

Antwerp, 100 brls.

**Pumice Stone—**

Rotterdam, 3 cs.

**Pyrites—**

Huelva, 1,166 t.

**Saltpetre—**

Hamburg, 1 ck.

**Soap—**

Dieppe, 1 ck.

**Sodium—**

Hamburg, 5 cs.

**Sodium Nitrate—**

Rotterdam, 18 cks.

Antwerp, 4 brls.

**Starch—**

Rotterdam, 5 cks. 100 cs.

**Tartaric Acid—**

Rotterdam, 40 cks.

**Ultramarine—**

Rotterdam, 1 ck.

Hamburg, 4

**Waste Salt—**

Hamburg, 308 bgs. and a qty.

**Wood Pulp—**

Hamburg, 22 bls.

Fiume, 102

**Zinc Oxide—**

Rotterdam, 100 brls.

Hamburg, 10 cks.

**Zinc White—**

Rotterdam, 25 cks.

**HULL.**

Week ending June 6th.

**Acetic Acid—**

Rotterdam, 34 blns. Hutchinson &amp; Son

**Albumen—**

St. Petersburg,

**Antimony—**

Dunkirk, 2 cks. Wilson, Sons, &amp; Co., Ltd.

**Arsenic—**

Stettin, 12 cks. Wilson, Sons, &amp; Co., Ltd.

**Barytes—**

Amsterdam, 22 cks. Hutchinson &amp; Son

Antwerp, 34 Bailey &amp; Leatham

Riga, 250 Wilson, Sons, &amp; Co., Ltd.

**Chemicals (otherwise undescribed)**

Antwerp, 68 pks. Wilson, Sons, &amp; Co., Ltd.

Dunkirk, 8 11 cks. 11

Bremen, 1 kg. Veltmann &amp; Co.

" 1 Sissons Brs &amp; Co.

Stettin, 31 cks. Wilson, Sons, &amp; Co., Ltd.

Hamburg, 1 cs. 21 pks. 10 kgs. Wilson, Sons, &amp; Co., Ltd.

**Cod Oil—**

Aalesund, 5 brls. Wilson, Sons, &amp; Co., Ltd.

Bergen, 72 "

**Colours—**

Antwerp, 12 pks. Wilson, Sons, &amp; Co., Ltd.

Rotterdam, 4 cks. Hutchinson &amp; Son

" 50 23 cs. W. &amp; C. L. Ringrose

Dunkirk, 6 pks. 22 Wilson, Sons, &amp; Co., Ltd.

Bremen, 2 Veltmann &amp; Co.

Stettin, 20

Hamburg, 20 Wilson, Sons, &amp; Co., Ltd.

**Dyestuffs—**

Alizarine

Rotterdam, 5 cks. W. &amp; C. L. Ringrose

Logwood

Hamburg, qty. Wilson, Sons, &amp; Co., Ltd.

**Madder**

Rotterdam, 2 cks. Hutchinson &amp; Son

**Valonia**

Smyrna, 2,400 c. 5 bgs.

**Dyestuffs (otherwise undescribed)**

Hamburg, 6 bgs. Wilson, Sons, &amp; Co., Ltd.

**Farina—**

Ghent, 340 cs. Wilson, Sons, &amp; Co., Ltd.

Stettin, 295 bgs. "

Hamburg, 100 "

**Glucose—**

Rotterdam, 50 bgs. Hutchinson &amp; Son

New York, 50 brls. Wilson, Sons, &amp; Co., Ltd.

" 550

**Glue—**

Rouen, 6 cs. Rawson &amp; Robinson

Antwerp, 16 cks. Wilson, Sons, &amp; Co., Ltd.

Dunkirk, 63 "

**Lime—**

New York, 240 bgs. Wilson, Sons, &amp; Co., Ltd.

**Limestone—**

Antwerp, 1 crte. Wilson, Sons, &amp; Co., Ltd.

**Paint—**

New York, 38 cs. Wilson, Sons, &amp; Co., Ltd.

**Phosphate—**

Antwerp, 100 t. 800 bgs. Wilson, Sons, &amp; Co., Ltd.

Ghent, 80

**Phosphorus—**

New York, 5 cs. Wilson, Sons, &amp; Co., Ltd.

**Pitch—**

Rotterdam, 10 cks. Hutchinson &amp; Son

**Quicksilver—**

Hamburg, 8 bls. Wilson, Sons, &amp; Co., Ltd.

**Soap—**

New York, 1,000 cs.

**Starch—**

Bremen, 2,838 cs. Veltmann &amp; Co.

**Sulphur—**

Dunkirk, 1 ck. Wilson, Sons, &amp; Co., Ltd.

**Tallow—**

Dunkirk, 33 cks. Wilson, Sons, &amp; Co., Ltd.

New York, 685 tcs. "

**Tartaric Acid—**

Rotterdam, 8 cks. Hutchinson &amp; Son

**Treacle—**

New York, 225 brls. Wilson, Sons, &amp; Co., Ltd.

**Ultramarine—**

Rotterdam, 8 cks. Hutchinson &amp; Son

**White Lead—**

Rotterdam, 94 cks. Hutchinson &amp; Son

Antwerp, 42 Bailey &amp; Leatham

**Wood Pulp—**

Helsingfors, 145 bls. J. Good &amp; Sons

Gotenburgh, 32 510 Wilson, Sons, &amp; Co., Ltd.



|                    |            |                     |
|--------------------|------------|---------------------|
| Christiania,       | 1,675 pks. | "                   |
| Drontheim,         | 500 bls.   | "                   |
| <b>Zinc Oxide—</b> |            |                     |
| Rotterdam,         | 5 cks.     | W. & C. L. Ringrose |
| Antwerp,           | 45         | Bailey & Leetham    |
| <b>Zinc White—</b> |            |                     |
| Rotterdam,         | 5 cks.     | W. & C. L. Ringrose |

**GLASGOW.**

Week ending June 11th.

|                                          |          |                  |
|------------------------------------------|----------|------------------|
| <b>Acetic Acid—</b>                      |          |                  |
| Rotterdam,                               | 7 cks.   | J. Rankine & Son |
| <b>Alizarine Colours—</b>                |          |                  |
| Antwerp,                                 | 21 cks.  |                  |
| <b>Alum—</b>                             |          |                  |
| Hamburg,                                 | 167 cks. |                  |
| <b>Alumina Sulphate—</b>                 |          |                  |
| Antwerp,                                 | 100 bgs. |                  |
| <b>Aniline—</b>                          |          |                  |
| Rotterdam,                               | 7 cs.    | J. Rankine & Son |
| <b>Aniline Colours—</b>                  |          |                  |
| Hamburg,                                 | 1 cs.    |                  |
| <b>Aniline Salt—</b>                     |          |                  |
| Rotterdam,                               | 10 cks.  | J. Rankine & Son |
| <b>Asbestos—</b>                         |          |                  |
| Quebec,                                  | 400 bgs. |                  |
| <b>Barium Sulphate—</b>                  |          |                  |
| Antwerp,                                 | 100 bgs. |                  |
| <b>Barytes—</b>                          |          |                  |
| Rotterdam,                               | 40 pks.  |                  |
| <b>Castor Oil—</b>                       |          |                  |
| Antwerp,                                 | 118 cks. |                  |
| <b>Chemicals (otherwise undescribed)</b> |          |                  |
| Rotterdam,                               | 1 cs.    | J. Rankine & Son |
| Hamburg,                                 | 1 ck.    |                  |
| Antwerp,                                 | 1        |                  |
| Lisbon,                                  | 5 brls.  |                  |
| <b>Colours—</b>                          |          |                  |
| Rotterdam,                               | 2 cks.   | J. Rankine & Son |
| Antwerp,                                 | 10       |                  |
| Rotterdam,                               | 50 pks.  |                  |
| Rouen,                                   | 1 cs.    |                  |

|                            |                   |                  |
|----------------------------|-------------------|------------------|
| <b>Dyestuffs—</b>          |                   |                  |
| <b>Alizarine</b>           |                   |                  |
| Rotterdam,                 | 142 cks.          | J. Rankine & Son |
| Argo's                     | 99 pks.           |                  |
| Bordeaux,                  | 61 cks.           |                  |
| <b>Indigo</b>              |                   |                  |
| Rotterdam,                 | 9 cts.            | J. Rankine & Son |
| <b>Logwood</b>             |                   |                  |
| Black River (Jam.),        | 549 L.            | 3 c.             |
|                            |                   | Mucklow & Co.    |
| <b>Glucose—</b>            |                   |                  |
| New York,                  | 100 brls.         |                  |
| Hamburg,                   | 24 cks.           |                  |
| <b>Glue—</b>               |                   |                  |
| Rouen,                     | 10 cks. 8 pks.    |                  |
| Rotterdam,                 | 40 bgs.           | J. Rankine & Son |
| Hamburg,                   | 20 bskts.         |                  |
| <b>Lead Acetate—</b>       |                   |                  |
| Hamburg,                   | 29 cks.           |                  |
| <b>Ochre—</b>              |                   |                  |
| New York,                  | 70 brls.          |                  |
| Rouen,                     | 25 cks.           |                  |
| <b>Potash—</b>             |                   |                  |
| Rotterdam,                 | 30 cks.           | J. Rankine & Son |
| <b>Potassium Chlorate—</b> |                   |                  |
| Rouen,                     | 16 cks.           |                  |
| <b>Pumice Stone—</b>       |                   |                  |
| Rotterdam,                 | 5 cs.             | J. Rankine & Son |
| <b>Pyrites—</b>            |                   |                  |
| Huelva,                    | 1,649 L.          | Tharsis Co.      |
| <b>Rosin—</b>              |                   |                  |
| New York,                  | 1,211 brls.       |                  |
| <b>Soap—</b>               |                   |                  |
| Rotterdam,                 | 2 cs.             | J. Rankine & Son |
| <b>Starch—</b>             |                   |                  |
| New York,                  | 200 sks. 400 bgs. |                  |
| Antwerp,                   | 100 cs.           |                  |
| Rotterdam,                 | 67                | J. Rankine & Son |
| <b>Stearine—</b>           |                   |                  |
| Amsterdam,                 | 124 bgs.          |                  |
| <b>Tallow—</b>             |                   |                  |
| New York,                  | 15 tcs.           |                  |
| <b>Tartar—</b>             |                   |                  |
| Oporto,                    | 5 cks.            |                  |
| Bordeaux,                  | 10                |                  |

|                     |                |                  |
|---------------------|----------------|------------------|
| <b>Ultramarine—</b> |                |                  |
| Antwerp,            | 26 cs.         |                  |
| <b>Yarnish—</b>     |                |                  |
| New York,           | 65 brls. 1 cs. |                  |
| <b>Waste Salt—</b>  |                |                  |
| Hamburg,            | 508 bgs.       |                  |
| <b>White Lead—</b>  |                |                  |
| Rotterdam,          | 59 cks.        | J. Rankine & Son |
| <b>Wood Pulp—</b>   |                |                  |
| Oporto,             | 250 bls.       |                  |
| Rotterdam,          | 130            | J. Rankine & Son |
| Christiania,        | 4,260          |                  |
| Hamburg,            | 170            |                  |
| <b>Zinc White—</b>  |                |                  |
| Rotterdam,          | 160 cks.       | J. Rankine & Son |

**TYNE.**

Week ending June 6th.

|                         |                  |                       |
|-------------------------|------------------|-----------------------|
| <b>Barium Chlorate—</b> |                  |                       |
| Rotterdam,              | 310 bgs.         | Tyne S. S. Co.        |
| <b>Barytes—</b>         |                  |                       |
| Antwerp,                | 150 bgs. 31 cks. | Tyne S. S. Co.        |
| <b>Cod Oil—</b>         |                  |                       |
| Bergen,                 | 5 brls.          |                       |
| <b>Glucose—</b>         |                  |                       |
| New York,               | 150 brls.        | Furness, Withy, & Co. |
| <b>Limestone—</b>       |                  |                       |
| Antwerp,                | 6 cs.            | Tyne S. S. Co.        |
| <b>Paint—</b>           |                  |                       |
| Laurvig,                | 6 bxs.           |                       |
| <b>Plumbago—</b>        |                  |                       |
| Hamburg,                | 27 cks.          | Tyne S. S. Co.        |
| <b>Quicksilver—</b>     |                  |                       |
| Copenhagen,             | 100 cyldrs.      |                       |
| <b>Soap—</b>            |                  |                       |
| Rotterdam,              | 7 cs.            | Tyne S. S. Co.        |
| <b>Stearine—</b>        |                  |                       |
| New York,               | 23 brls.         | Furness, Withy, & Co. |
| <b>Ultramarine—</b>     |                  |                       |
| Hamburg,                | 2 cks.           | Tyne S. S. Co.        |
| <b>Wood Pulp—</b>       |                  |                       |
| Gothenburg,             | 40 bds.          |                       |
| <b>Zinc Oxide—</b>      |                  |                       |
| Antwerp,                | 75 brls.         | Tyne S. S. Co.        |

**GOOLE.**

Week ending June 3rd

|                                          |                   |  |
|------------------------------------------|-------------------|--|
| <b>Alizarine—</b>                        |                   |  |
| Rotterdam,                               | 6 brls.           |  |
| <b>Alkali—</b>                           |                   |  |
| Calais,                                  | 10 cks.           |  |
| <b>Aniline—</b>                          |                   |  |
| Hamburg,                                 | 12 cks. 3 cs.     |  |
| <b>Antimony Sulphide—</b>                |                   |  |
| Boulogne,                                | 3 cks.            |  |
| <b>Barytes—</b>                          |                   |  |
| Hamburg,                                 | 120 bgs.          |  |
| Rotterdam,                               | 6 cks.            |  |
| <b>Caoutchouc—</b>                       |                   |  |
| Boulogne,                                | qty.              |  |
| <b>Carbonate of Lime—</b>                |                   |  |
| Antwerp,                                 | 133 bgs.          |  |
| <b>Chemicals (otherwise undescribed)</b> |                   |  |
| Hamburg,                                 | 2 cs.             |  |
| <b>Dyestuffs (otherwise undescribed)</b> |                   |  |
| Rotterdam,                               | 169 cks. 39 cs.   |  |
| Boulogne,                                | 95 25             |  |
| <b>Glucose—</b>                          |                   |  |
| Hamburg,                                 | 53 cks.           |  |
| <b>Glue—</b>                             |                   |  |
| Boulogne,                                | 10 cks.           |  |
| <b>Potash—</b>                           |                   |  |
| Rotterdam,                               | 50 cks.           |  |
| <b>Potassium Sulphate—</b>               |                   |  |
| Dunkirk,                                 | 10 dms.           |  |
| <b>Saltpetre—</b>                        |                   |  |
| Rotterdam,                               | 100 bgs.          |  |
| <b>Waste Salt—</b>                       |                   |  |
| Hamburg,                                 | 500 bgs. 554 cks. |  |

**GRIMSBY.**

Week ending June 6th

|                                          |         |  |
|------------------------------------------|---------|--|
| <b>Barytes—</b>                          |         |  |
| Hamburg,                                 | 7 cks.  |  |
| <b>Caoutchouc—</b>                       |         |  |
| Hamburg,                                 | 17 cs.  |  |
| Rotterdam,                               | 3       |  |
| <b>Chemicals (otherwise undescribed)</b> |         |  |
| Hamburg,                                 | 5 cs.   |  |
| Rotterdam,                               | 20 pks. |  |
| <b>Dyes—</b>                             |         |  |
| Antwerp,                                 | 80 pks. |  |

**EXPORTS OF CHEMICAL PRODUCTS**

OF

**THE PRINCIPAL PORTS OF THE UNITED KINGDOM.****LONDON.**

Week ending June 10th.

|                            |             |       |
|----------------------------|-------------|-------|
| <b>Acids—</b>              |             |       |
| Porto Alegre,              | 23 cks.     | £113  |
| Natal,                     | 2 t. 8 c.   | 26    |
| <b>Alkali—</b>             |             |       |
| Rio,                       | 15 t. 15 c. | £72   |
| Dunedin,                   | 3           | 103   |
| E. London,                 | 5           | 17    |
| <b>Alum—</b>               |             |       |
| Calcutta,                  | 30 t.       | £73   |
| <b>Ammonia—</b>            |             |       |
| Melbourne,                 | 28 cs.      | £76   |
| Teneriffe,                 | 10 c.       | 15    |
| <b>Ammonium Carbonate—</b> |             |       |
| St. Petersburg,            | 10 brls.    | £28   |
| Halifax,                   | 11 c.       | 15    |
| London (Ont.),             | 1 t. 14     | 44    |
| Amsterdam,                 | 17 pks.     | 28    |
| Paris,                     | 1           | 34    |
| Dunkirk,                   | 1           | 4     |
| Dunedin,                   | 10 cs.      | 19    |
| <b>Ammonium Chloride—</b>  |             |       |
| Samsoun,                   | 1 t. 10 c.  | £54   |
| Galatz,                    | 9           | 16    |
| Rotterdam,                 | 18 cks. 121 | 33    |
| Varna,                     | 1           | 2     |
| Sydney,                    | 8           | 54    |
| <b>Ammonium Sulphate—</b>  |             |       |
| Philadelphia,              | 51 t.       | £475  |
| Hamburg,                   | 50          | 535   |
| Antwerp,                   | 241 11 c.   | 2,123 |
| Mannheim,                  | 70          | 425   |
| Valencia,                  | 70          | 578   |
| S. Vincent,                | 10          | 500   |
| Mauritius,                 | 100         | 830   |

|                                          |             |           |
|------------------------------------------|-------------|-----------|
| <b>Ammonium Sulphocyanide—</b>           |             |           |
| Philadelphia,                            | 10 cks.     | £90       |
| <b>Arsenic—</b>                          |             |           |
| Wellington,                              | 3 t.        | £62       |
| <b>Bleaching Powder—</b>                 |             |           |
| Gibraltar,                               | 12 c.       | £45       |
| <b>Borax—</b>                            |             |           |
| Natal,                                   | 12 c.       | £17       |
| <b>Carbolic Acid—</b>                    |             |           |
| Dunedin,                                 | 1 ck.       | £67       |
| Rotterdam,                               | 80          | 667       |
| <b>Carbonic Acid Gas—</b>                |             |           |
| Jersey,                                  | 42 tubes    | £16       |
| <b>Caustic Soda—</b>                     |             |           |
| E. London,                               | 8 c.        | £11       |
| Algoa Bay,                               | 3 t. 10     | 83        |
| Cape Town,                               | 12          | 12        |
| Natal,                                   | 5           | 66        |
| Dunedin,                                 | 2           | 3         |
| <b>Chemicals (otherwise undescribed)</b> |             |           |
| Brisbane,                                | 20 kgs. £28 |           |
| Melbourne,                               | 7 t. 2 c.   | 360       |
| Reval,                                   | 1           | 33        |
| Christiania,                             | 1           | 50        |
| Montreal,                                | 3 cks.      | 1         |
| Shanghai,                                | 4 cs.       | 56        |
| Madras,                                  | 5           | 351       |
| Hamburg,                                 | 5           | 5         |
| Adelaide,                                | 10          | 33        |
| Rombay,                                  | 3           | 12        |
| St. Petersburg,                          | 8           | 41        |
| Albany,                                  | 4 cs.       | 18        |
| Oporto,                                  | 2 cks.      | 17        |
| Dunedin,                                 | 2           | 5 pks. 74 |

|                       |               |        |
|-----------------------|---------------|--------|
| <b>Citric Acid—</b>   |               |        |
| Adelaide,             | 3 c.          | £19    |
| Galatz,               | 8             | 56     |
| Genoa,                | 5             | 30     |
| Rotterdam,            | 5 kgs.        | 30     |
| B. Ayres,             | 4 cs.         | 28     |
| Sydney,               | 10            | 61     |
| Bombay,               | 1             | 10     |
| Antwerp,              | 1 t.          | 126    |
| Brussels,             | 1             | 126    |
| Amsterdam,            | 6             | 38     |
| Riga,                 | 2             | 13     |
| <b>Coal Products—</b> |               |        |
| <b>Aniline Dyes</b>   |               |        |
| Melbourne,            | 2 cs.         | £20    |
| <b>Aniline Oil</b>    |               |        |
| Ghent,                | 2 cks.        | £30    |
| <b>Anthracene</b>     |               |        |
| Dusseldorf,           | 54 cks.       | £383   |
| <b>Benzol</b>         |               |        |
| Rotterdam,            | 1 dm. 50 cks. | £248   |
| Amsterdam,            | 24            | 136    |
| <b>Creosote</b>       |               |        |
| N. Orleans,           | 2,500 cks.    | £1,104 |
| <b>Creosote Oil</b>   |               |        |
| Helsingfors,          | 20 brls.      | £16    |
| <b>Naphthaline</b>    |               |        |
| Hamburg,              | 500 bgs.      | £244   |
| Rotterdam,            | 39            | 11     |
| <b>Pitch</b>          |               |        |
| Montreal,             | 360 brls.     | £130   |
| Alexandria,           | 300           | 111    |
| Salonica,             | 100           | 50     |
| Antwerp,              | 900 t.        | 1,645  |
| Aviles,               | 750           | 1,237  |
| Hochfeld,             | 278           | 503    |
| Brest,                | 135           | 250    |

|                         |              |        |
|-------------------------|--------------|--------|
| Duisburg,               | 74 brls.     | 139    |
| N. Orleans,             | 1,230 cks.   | 696    |
| <b>Pyridine</b>         |              |        |
| Hamburg,                | 12 cks.      | £134   |
| <b>Tar</b>              |              |        |
| Helsingfors,            | 1,000 brls.  | £571   |
| N. Orleans,             | 100 cks.     | 23     |
| Natal,                  | 20           | 13     |
| Melbourne,              | 85 drs.      | 16     |
| <b>Tar Oil</b>          |              |        |
| Philadelphia,           | 1,999 cks.   | £313   |
| <b>Copper Sulphate—</b> |              |        |
| Rouen,                  | 89 t.        | £4,713 |
| Genoa,                  | 5            | 2 c.   |
| Varna,                  | 1            | 5      |
| Paris,                  | 100          | 1,938  |
| Bordeaux,               | 30           | 7      |
| <b>Cream of Tartar—</b> |              |        |
| Sydney,                 | 1 t.         | £26    |
| E. London,              | 1 cs.        | 11     |
| Adelaide,               | 1            | 15 c.  |
| <b>Disinfectants—</b>   |              |        |
| Rotterdam,              | 3 cks.       | £65    |
| Cape Town,              | 1,000 drs.   | 235    |
| Wellington,             | 10           | 10     |
| Penang,                 | 5            | 450    |
| Sydney,                 | 62 cs.       | 184    |
| Macao,                  | 2            | 14     |
| Hong Kong,              | 5            | 17     |
| <b>Guano—</b>           |              |        |
| Adra,                   | 74 t. 2 c.   | £169   |
| Paris,                  | 2            | 50     |
| <b>Manure—</b>          |              |        |
| Hamburg,                | 295 t. 11 c. | £850   |
| Dunkirk,                | 5            | 30     |
| Adra,                   | 86           | 3      |
| Guernsey,               | 5            | 23     |
| Dunedin,                | 210          | 2,800  |



|                                                                                                                                                                                                                                               |                                              |                                                     |                                         |                                            |                                          |                                                 |                                                          |                                                    |                                                                               |                                                                   |                                                  |                                                                                            |                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                        |                                                |                                                    |                                               |                                                                                          |                                              |                                                   |                                                                   |                                                                                                                                  |  |  |  |  |
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| <b>Muriatic Acid</b> —<br>Mauritius, 15 carboys £18                                                                                                                                                                                           | <b>Nitric Acid</b> —<br>Shanghai, 15 cs. £19 | <b>Nitrogen Peroxide</b> —<br>Wellington, 1 cs. £10 | <b>Oxalic Acid</b> —<br>Hiogo, 1 t. £31 | <b>Phosphorus</b> —<br>Dunedin, 10 cs. £96 | <b>Potash</b> —<br>Valparaiso, 14 c. £35 | <b>Potash Crystals</b> —<br>Toronto, 9 pks. £25 | <b>Potash Salts</b> —<br>Delagoa Bay, 11 t. 14 c. £1,137 | <b>Potassium Chlorate</b> —<br>Cape Town, 1 t. £42 | <b>Potassium Cyanide</b> —<br>E. London, 10 cs. £212<br>Delagoa Bay, 3 t. 357 | <b>Potassium Prussiate</b> —<br>Hamburg, 12 c. £38<br>Genoa, 2 35 | <b>Salicylic Acid</b> —<br>Townsville, 1 cs. £13 | <b>Saltpetre</b> —<br>Santos, 11 t. £262<br>Rio de Janeiro, 23 12 c. 560<br>Dunedin, 10 12 | <b>Sheep Dip</b> —<br>Timaru, 250 cs. £623<br>Jamaica, 30 drs. 13<br>Durban, 9 c. 13<br>Invercargill, 11 25<br>B. Ayres, 1,000 3 000<br>Montreal, 1 t. 3 10 | <b>Silver Nitrate</b> —<br>Barcelona, 2 cs. £350<br>Hong Kong, 1 14                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <b>Soda</b> —<br>Boston, 2 t. 6 c. £24 | <b>Soda Ash</b> —<br>Lyttelton, 5 t. 14 c. £20 | <b>Soda Crystals</b> —<br>Adelaide, 10 t. 8 c. £74 | <b>Sodium Acetate</b> —<br>Brisbane, 9 c. £24 | <b>Sodium Bicarbonate</b> —<br>St. John, N.B., 5 c. £3<br>Bombay, 1 t. 12<br>Hobart, 1 8 | <b>Sodium Carbonate</b> —<br>Natal, 12 c. £8 | <b>Sodium Hyposulphite</b> —<br>Boston, 11 t. £58 | <b>Sulphuric Acid</b> —<br>Madras, 3 c. £19<br>Colombo, 25 cs. 16 | <b>Tartaric Acid</b> —<br>Valencia, 7 c. £42<br>Cape Town, 2 15<br>Sydney, 1 t. 123<br>Dunedin, 7 46<br>Adelaide, 10 30 kgs. 251 |  |  |  |  |
| <b>LIVERPOOL.</b><br>Period ending June 10th.                                                                                                                                                                                                 |                                              |                                                     |                                         |                                            |                                          |                                                 |                                                          |                                                    |                                                                               |                                                                   |                                                  |                                                                                            |                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                        |                                                |                                                    |                                               |                                                                                          |                                              |                                                   |                                                                   |                                                                                                                                  |  |  |  |  |
| <b>Acetate of Iron</b> —<br>Pernambuco, 2 t. 2 c. 1 q. £18                                                                                                                                                                                    |                                              |                                                     |                                         |                                            |                                          |                                                 |                                                          |                                                    |                                                                               |                                                                   |                                                  |                                                                                            |                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                        |                                                |                                                    |                                               |                                                                                          |                                              |                                                   |                                                                   |                                                                                                                                  |  |  |  |  |
| <b>Albumen</b> —<br>Vera Cruz, 16 c. £80<br>New York, 4 t. 1 435                                                                                                                                                                              |                                              |                                                     |                                         |                                            |                                          |                                                 |                                                          |                                                    |                                                                               |                                                                   |                                                  |                                                                                            |                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                        |                                                |                                                    |                                               |                                                                                          |                                              |                                                   |                                                                   |                                                                                                                                  |  |  |  |  |
| <b>Alum</b> —<br>Tacoma, 51 t. £255<br>Beyrout, 3 10 c. 17<br>Galatz, 1 3 6<br>Melbourne, 6 17 2 q. 34<br>Volo, 1 9 2 5<br>Bourgas, 3 19 1 20<br>Callao, 1 5<br>B. Ayres, 24 15 108<br>Piraeus, 2 2 10<br>Pernambuco, 1 3 2 7<br>Lisbon, 5 23 |                                              |                                                     |                                         |                                            |                                          |                                                 |                                                          |                                                    |                                                                               |                                                                   |                                                  |                                                                                            |                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                        |                                                |                                                    |                                               |                                                                                          |                                              |                                                   |                                                                   |                                                                                                                                  |  |  |  |  |
| <b>Ammonia Sulphate</b> —<br>Lisbon, 6 c. £5                                                                                                                                                                                                  |                                              |                                                     |                                         |                                            |                                          |                                                 |                                                          |                                                    |                                                                               |                                                                   |                                                  |                                                                                            |                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                        |                                                |                                                    |                                               |                                                                                          |                                              |                                                   |                                                                   |                                                                                                                                  |  |  |  |  |
| <b>Aluminous Cake</b> —<br>Melbourne, 6 t. 8 c. 2 q. £26                                                                                                                                                                                      |                                              |                                                     |                                         |                                            |                                          |                                                 |                                                          |                                                    |                                                                               |                                                                   |                                                  |                                                                                            |                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                        |                                                |                                                    |                                               |                                                                                          |                                              |                                                   |                                                                   |                                                                                                                                  |  |  |  |  |
| <b>Ammonium Chloride</b> —<br>Valparaiso, 1 t. 16 c. £67<br>Galatz, 3 3 6<br>Trieste, 3 105<br>Bari, 2 70<br>Beyrout, 1 7 46<br>Ibrahl, 11 19                                                                                                 |                                              |                                                     |                                         |                                            |                                          |                                                 |                                                          |                                                    |                                                                               |                                                                   |                                                  |                                                                                            |                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                        |                                                |                                                    |                                               |                                                                                          |                                              |                                                   |                                                                   |                                                                                                                                  |  |  |  |  |
|                                                                                                                                                                                                                                               |                                              |                                                     |                                         |                                            |                                          |                                                 |                                                          |                                                    |                                                                               |                                                                   |                                                  |                                                                                            |                                                                                                                                                             | <b>Ammonium Sulphate</b> —<br>Rotterdam, 50 t. £410<br>Sourabaya, 128 4 c. 3 q. 1,063<br>Gd. Canary, 23 194<br>New York, 28 229<br>Alicante, 30 256<br>Las Palmas, 30 4 3 259<br>Valencia, 20 10 3 170                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                        |                                                |                                                    |                                               |                                                                                          |                                              |                                                   |                                                                   |                                                                                                                                  |  |  |  |  |
|                                                                                                                                                                                                                                               |                                              |                                                     |                                         |                                            |                                          |                                                 |                                                          |                                                    |                                                                               |                                                                   |                                                  |                                                                                            |                                                                                                                                                             | <b>Ammonium Sulphocyanide</b> —<br>Philadelphia, 7 c. £27                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                        |                                                |                                                    |                                               |                                                                                          |                                              |                                                   |                                                                   |                                                                                                                                  |  |  |  |  |
|                                                                                                                                                                                                                                               |                                              |                                                     |                                         |                                            |                                          |                                                 |                                                          |                                                    |                                                                               |                                                                   |                                                  |                                                                                            |                                                                                                                                                             | <b>Ammonia (Anhydrous)</b> —<br>Shanghai, 3 c. 1 q. £15<br>Cape Town, 3 26                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                        |                                                |                                                    |                                               |                                                                                          |                                              |                                                   |                                                                   |                                                                                                                                  |  |  |  |  |
|                                                                                                                                                                                                                                               |                                              |                                                     |                                         |                                            |                                          |                                                 |                                                          |                                                    |                                                                               |                                                                   |                                                  |                                                                                            |                                                                                                                                                             | <b>Bisulphite of Lime</b> —<br>Oporto, 6 c. £5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                        |                                                |                                                    |                                               |                                                                                          |                                              |                                                   |                                                                   |                                                                                                                                  |  |  |  |  |
|                                                                                                                                                                                                                                               |                                              |                                                     |                                         |                                            |                                          |                                                 |                                                          |                                                    |                                                                               |                                                                   |                                                  |                                                                                            |                                                                                                                                                             | <b>Bleaching Powder</b> —<br>Algoa Bay, 20 dms.<br>Baltimore, 182 cks<br>Bari, 10<br>Bombay, 13 cs.<br>Boston, 693 7 brls.<br>Dunedin, 66<br>Genoa, 206<br>Ghent, 66<br>Konigsberg, 34<br>Leghorn, 10<br>Montreal, 45<br>Nantes, 47<br>Newport News, 193 32 bxs.<br>New York, 262 100<br>Norfolk, 10<br>Oporto, 6<br>Pasages, 2<br>Philadelphia, 223<br>Rio de Janeiro, 28<br>Rouen, 16<br>San Sebastian, 55<br>Seville, 31<br>Vigo, 8<br>Pernambuco, 3 t. 19 c. 2 q. £36                                                                                                                                                                                                                                                                                                                                                                                                                          |                                        |                                                |                                                    |                                               |                                                                                          |                                              |                                                   |                                                                   |                                                                                                                                  |  |  |  |  |
|                                                                                                                                                                                                                                               |                                              |                                                     |                                         |                                            |                                          |                                                 |                                                          |                                                    |                                                                               |                                                                   |                                                  |                                                                                            |                                                                                                                                                             | <b>Boracic Acid</b> —<br>Montreal, 15 c. 2 q. £75<br>Antwerp, 3 t. 16 1 88                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                        |                                                |                                                    |                                               |                                                                                          |                                              |                                                   |                                                                   |                                                                                                                                  |  |  |  |  |
|                                                                                                                                                                                                                                               |                                              |                                                     |                                         |                                            |                                          |                                                 |                                                          |                                                    |                                                                               |                                                                   |                                                  |                                                                                            |                                                                                                                                                             | <b>Borate of Lime</b> —<br>Constantinople, 15 t. £150                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                        |                                                |                                                    |                                               |                                                                                          |                                              |                                                   |                                                                   |                                                                                                                                  |  |  |  |  |
|                                                                                                                                                                                                                                               |                                              |                                                     |                                         |                                            |                                          |                                                 |                                                          |                                                    |                                                                               |                                                                   |                                                  |                                                                                            |                                                                                                                                                             | <b>Borax</b> —<br>Melbourne, 1 t. £20<br>Gothenburg, 1 20<br>Ghent, 1 20<br>Antwerp, 5 16 c. 2 q. 114<br>Amsterdam, 1 2 25<br>New York, 10 2 10<br>Havre, 8 160<br>Genoa, 19 3 20<br>Sydney, 3 10 73<br>Rotterdam, 19 3 385<br>Barcelona, 1 16 36<br>Hamburg, 35 6 1 707<br>Montreal, 6 1 2 126                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                        |                                                |                                                    |                                               |                                                                                          |                                              |                                                   |                                                                   |                                                                                                                                  |  |  |  |  |
|                                                                                                                                                                                                                                               |                                              |                                                     |                                         |                                            |                                          |                                                 |                                                          |                                                    |                                                                               |                                                                   |                                                  |                                                                                            |                                                                                                                                                             | <b>Calcium Chloride</b> —<br>Melbourne, 10 t. 2 c. £24<br>Rangoon, 1 13 7<br>Brisbane, 1 1 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                        |                                                |                                                    |                                               |                                                                                          |                                              |                                                   |                                                                   |                                                                                                                                  |  |  |  |  |
|                                                                                                                                                                                                                                               |                                              |                                                     |                                         |                                            |                                          |                                                 |                                                          |                                                    |                                                                               |                                                                   |                                                  |                                                                                            |                                                                                                                                                             | <b>Carbolic Acid</b> —<br>Baltimore, 5 t. 17 c. £287<br>Rotterdam, 5 350<br>Toronto, 2 7<br>Alexandria, 10 13 1 q. 7<br>go dms. 50<br>Hamburg, 10 3 527<br>Old Calabar, 8 dms. 7<br>Odessa, 1 t. 7 3 44                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                        |                                                |                                                    |                                               |                                                                                          |                                              |                                                   |                                                                   |                                                                                                                                  |  |  |  |  |
|                                                                                                                                                                                                                                               |                                              |                                                     |                                         |                                            |                                          |                                                 |                                                          |                                                    |                                                                               |                                                                   |                                                  |                                                                                            |                                                                                                                                                             | <b>Caustic Potash</b> —<br>Sydney, 10 c. £13<br>Newcastle, 2 t. 3 05                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                        |                                                |                                                    |                                               |                                                                                          |                                              |                                                   |                                                                   |                                                                                                                                  |  |  |  |  |
|                                                                                                                                                                                                                                               |                                              |                                                     |                                         |                                            |                                          |                                                 |                                                          |                                                    |                                                                               |                                                                   |                                                  |                                                                                            |                                                                                                                                                             | <b>Caustic Soda</b> —<br>Adelaide, 6 dms. 10 bxs.<br>Alexandria, 5<br>Amsterdam, 35<br>Ancona, 18 26 brls.<br>Antwerp, 10<br>Bahia, 10<br>Baltimore, 340 45 cks.<br>Barcelona, 265<br>Bari, 35<br>Bilbao, 115 28<br>Bombay, 18<br>Boston, 10 cs. 300<br>Brisbane, 20<br>Calcutta, 40<br>Callao, 18<br>Cartagena, Sp. 86 pks.<br>Constantinople, 22<br>Dunedin, 3 brls 70<br>Fairwater, 202<br>Galatz, 10<br>Genoa, 366<br>Hamburg, 60<br>Havana, 60<br>Leghorn, 40<br>Lisbon, 124<br>Malaga, 120<br>Maranham, 13                                                                                                                                                                                                                                                                                                                                                                                   |                                        |                                                |                                                    |                                               |                                                                                          |                                              |                                                   |                                                                   |                                                                                                                                  |  |  |  |  |
|                                                                                                                                                                                                                                               |                                              |                                                     |                                         |                                            |                                          |                                                 |                                                          |                                                    |                                                                               |                                                                   |                                                  |                                                                                            |                                                                                                                                                             | <b>Mazatlan</b> , 400<br><b>Melbourne</b> , 191<br><b>Messina</b> , 128<br><b>M. Video</b> , 50<br><b>Montreal</b> , 115<br><b>Naples</b> , 136<br><b>Newport News</b> , 70 bxs.<br><b>N. York</b> , 75 brls. 186<br><b>Odessa</b> , 170<br><b>Oporto</b> , 187<br><b>Palermo</b> , 15<br><b>Paris</b> , 35<br><b>Pernambuco</b> , 95<br><b>Philadelphia</b> , 271<br><b>Port Natal</b> , 15<br><b>Porto Alegre</b> , 50<br><b>Puerto Cabello</b> , 20<br><b>Rio de Janeiro</b> , 22<br><b>Rotterdam</b> , 30 10<br><b>San Sebastian</b> , 30<br><b>Santander</b> , 20<br><b>Seville</b> , 62<br><b>Shanghai</b> , 4<br><b>Singapore</b> , 60<br><b>Sourabaya</b> , 8<br><b>Talcahuano</b> , 200<br><b>Tampico</b> , 70<br><b>Tarragona</b> , 60<br><b>Valdivia</b> , 10<br><b>Valencia</b> , 25<br><b>Valparaiso</b> , 60<br><b>Verice</b> , 20<br><b>Wellington</b> , 36<br>" <b>N.Z.</b> , 3 12 |                                        |                                                |                                                    |                                               |                                                                                          |                                              |                                                   |                                                                   |                                                                                                                                  |  |  |  |  |
|                                                                                                                                                                                                                                               |                                              |                                                     |                                         |                                            |                                          |                                                 |                                                          |                                                    |                                                                               |                                                                   |                                                  |                                                                                            |                                                                                                                                                             | <b>Cnemicals (otherwise undescrbed)</b><br>Odessa, 5 t. £163<br>Antwerp, 12 c. 1 q. 14<br>Dunkirk, 6 9<br>New York, 5 4 3 145<br>Hamburg, 1 6 38<br>Naples, 10 18<br>Rotterdam, 6 11<br>Christiania, 4 7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                        |                                                |                                                    |                                               |                                                                                          |                                              |                                                   |                                                                   |                                                                                                                                  |  |  |  |  |
|                                                                                                                                                                                                                                               |                                              |                                                     |                                         |                                            |                                          |                                                 |                                                          |                                                    |                                                                               |                                                                   |                                                  |                                                                                            |                                                                                                                                                             | <b>China Clay</b> —<br>Baltimore, 118 cks.<br>Boston, 3,036<br>Lisbon, 200 bgs.<br>Maranham, 30<br>New York, 29 t.<br>Rio de Janeiro, 7 10 c.<br>Trieste, 9 8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                        |                                                |                                                    |                                               |                                                                                          |                                              |                                                   |                                                                   |                                                                                                                                  |  |  |  |  |
|                                                                                                                                                                                                                                               |                                              |                                                     |                                         |                                            |                                          |                                                 |                                                          |                                                    |                                                                               |                                                                   |                                                  |                                                                                            |                                                                                                                                                             | <b>Citric Acid</b> —<br>Cadiz, 2 c. £12                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                        |                                                |                                                    |                                               |                                                                                          |                                              |                                                   |                                                                   |                                                                                                                                  |  |  |  |  |
|                                                                                                                                                                                                                                               |                                              |                                                     |                                         |                                            |                                          |                                                 |                                                          |                                                    |                                                                               |                                                                   |                                                  |                                                                                            |                                                                                                                                                             | <b>Coal Products</b> —<br><b>Aniline Colours</b><br>Boston, 5 kgs.<br>New York, 4 cks 18 brls.<br><b>Aniline Oil</b><br>Lisbon, 1 dm.<br>Philadelphia, 12<br><b>Aniline Salt</b><br>Barcelona, 10 cks<br><b>Anthracene</b><br>Rotterdam, 121 cks. 100 brls.<br><b>Cresosote Oil</b><br>Lisbon, 250 brls.<br><b>Naphthalene</b><br>Antwerp, 2,6 bgs.<br><b>Pitch</b><br>Certe, 2,145 t. 14 c.<br>Kuirachee, 127 brls.<br><b>Tar</b><br>Accra, 10 brls<br>Batavia, 30<br><b>Tar S. lts</b><br>Montreal, 9 cks.                                                                                                                                                                                                                                                                                                                                                                                       |                                        |                                                |                                                    |                                               |                                                                                          |                                              |                                                   |                                                                   |                                                                                                                                  |  |  |  |  |
|                                                                                                                                                                                                                                               |                                              |                                                     |                                         |                                            |                                          |                                                 |                                                          |                                                    |                                                                               |                                                                   |                                                  |                                                                                            |                                                                                                                                                             | <b>Copper Sulphate</b> —<br>Callao, 9 c. £9<br>Rouen, 15 t. 2 3 q. 285<br>Pernambuco, 10 11<br>Paris, 25 17 465<br>Bari, 32 19 678<br>Venice, 159 5 2,773<br>Genoa, 128 7 1 2,171<br>Bordeaux, 657 7 2 11,761<br>Ancona, 19 18 2 671<br>Barcelona, 35 3 589<br>Nantes, 17 5 276<br>Leghorn, 6 2 1 123                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                        |                                                |                                                    |                                               |                                                                                          |                                              |                                                   |                                                                   |                                                                                                                                  |  |  |  |  |
|                                                                                                                                                                                                                                               |                                              |                                                     |                                         |                                            |                                          |                                                 |                                                          |                                                    |                                                                               |                                                                   |                                                  |                                                                                            |                                                                                                                                                             | <b>Copperas</b> —<br>Callao, 5 t. £9<br>Valparaiso, 3 15 c. 80<br>Varna, 2 11 5<br>Bourgas, 2 4 3<br>Pasages, 11 1<br>Beyrout, 4 7<br>Pernambuco, 4 17 1 q. 5<br>Volo, 5 9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                        |                                                |                                                    |                                               |                                                                                          |                                              |                                                   |                                                                   |                                                                                                                                  |  |  |  |  |
|                                                                                                                                                                                                                                               |                                              |                                                     |                                         |                                            |                                          |                                                 |                                                          |                                                    |                                                                               |                                                                   |                                                  |                                                                                            |                                                                                                                                                             | <b>Disinfectants</b> —<br>Toronto 1 t. £30<br>Algoa Bay, 10 kgs 5<br>New York, 19 c. 2 q. 15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                        |                                                |                                                    |                                               |                                                                                          |                                              |                                                   |                                                                   |                                                                                                                                  |  |  |  |  |
|                                                                                                                                                                                                                                               |                                              |                                                     |                                         |                                            |                                          |                                                 |                                                          |                                                    |                                                                               |                                                                   |                                                  |                                                                                            |                                                                                                                                                             | <b>Dried Blood</b> —<br>Gd. Canary, 3 t. £18                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                        |                                                |                                                    |                                               |                                                                                          |                                              |                                                   |                                                                   |                                                                                                                                  |  |  |  |  |
|                                                                                                                                                                                                                                               |                                              |                                                     |                                         |                                            |                                          |                                                 |                                                          |                                                    |                                                                               |                                                                   |                                                  |                                                                                            |                                                                                                                                                             | <b>French Chalk</b> —<br>Montreal, 5 cks.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                        |                                                |                                                    |                                               |                                                                                          |                                              |                                                   |                                                                   |                                                                                                                                  |  |  |  |  |
|                                                                                                                                                                                                                                               |                                              |                                                     |                                         |                                            |                                          |                                                 |                                                          |                                                    |                                                                               |                                                                   |                                                  |                                                                                            |                                                                                                                                                             | <b>Gelatine</b> —<br>New York, 150 bxs.<br>Piraeus, 2 cs.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                        |                                                |                                                    |                                               |                                                                                          |                                              |                                                   |                                                                   |                                                                                                                                  |  |  |  |  |
|                                                                                                                                                                                                                                               |                                              |                                                     |                                         |                                            |                                          |                                                 |                                                          |                                                    |                                                                               |                                                                   |                                                  |                                                                                            |                                                                                                                                                             | <b>Iron Oxide</b> —<br>Montreal, 2 t. 1 c. £8<br>Bilbao, 1 13 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                        |                                                |                                                    |                                               |                                                                                          |                                              |                                                   |                                                                   |                                                                                                                                  |  |  |  |  |
|                                                                                                                                                                                                                                               |                                              |                                                     |                                         |                                            |                                          |                                                 |                                                          |                                                    |                                                                               |                                                                   |                                                  |                                                                                            |                                                                                                                                                             | <b>Iron Sulphate</b> —<br>Melbourne, 3 t. 7 c. £9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                        |                                                |                                                    |                                               |                                                                                          |                                              |                                                   |                                                                   |                                                                                                                                  |  |  |  |  |
|                                                                                                                                                                                                                                               |                                              |                                                     |                                         |                                            |                                          |                                                 |                                                          |                                                    |                                                                               |                                                                   |                                                  |                                                                                            |                                                                                                                                                             | <b>Litharge</b> —<br>Bahia, 10 kgs.<br>Oporto, 10 cks.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                        |                                                |                                                    |                                               |                                                                                          |                                              |                                                   |                                                                   |                                                                                                                                  |  |  |  |  |
|                                                                                                                                                                                                                                               |                                              |                                                     |                                         |                                            |                                          |                                                 |                                                          |                                                    |                                                                               |                                                                   |                                                  |                                                                                            |                                                                                                                                                             | <b>Magnesium Chlorate</b> —<br>Rouen, 10 t. 4 c. £14                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                        |                                                |                                                    |                                               |                                                                                          |                                              |                                                   |                                                                   |                                                                                                                                  |  |  |  |  |
|                                                                                                                                                                                                                                               |                                              |                                                     |                                         |                                            |                                          |                                                 |                                                          |                                                    |                                                                               |                                                                   |                                                  |                                                                                            |                                                                                                                                                             | <b>Magnesium Sulphate</b><br>Bahia, 10 brls.<br>Macao, 10<br>Pernambuco, 200 bgs.<br>Rio de Janeiro, 40<br>Sydney, 20 cs.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                        |                                                |                                                    |                                               |                                                                                          |                                              |                                                   |                                                                   |                                                                                                                                  |  |  |  |  |
|                                                                                                                                                                                                                                               |                                              |                                                     |                                         |                                            |                                          |                                                 |                                                          |                                                    |                                                                               |                                                                   |                                                  |                                                                                            |                                                                                                                                                             | <b>Manure</b> —<br>Valencia, 25 t. 2 q. £55<br>Halifax, 10 35<br>St. Nazaire, 150 1 c. 324<br>Madeira, 25 175<br>Salta, 1 2 30<br>Las Palmas, 13 16 63<br>Barcelona, 1 19 2 16                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                        |                                                |                                                    |                                               |                                                                                          |                                              |                                                   |                                                                   |                                                                                                                                  |  |  |  |  |
|                                                                                                                                                                                                                                               |                                              |                                                     |                                         |                                            |                                          |                                                 |                                                          |                                                    |                                                                               |                                                                   |                                                  |                                                                                            |                                                                                                                                                             | <b>Muriatic Acid</b> —<br>Valparaiso, 1 t. £9<br>Pernambuco, 1 2 c. 13                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                        |                                                |                                                    |                                               |                                                                                          |                                              |                                                   |                                                                   |                                                                                                                                  |  |  |  |  |
|                                                                                                                                                                                                                                               |                                              |                                                     |                                         |                                            |                                          |                                                 |                                                          |                                                    |                                                                               |                                                                   |                                                  |                                                                                            |                                                                                                                                                             | <b>Nitric Acid</b> —<br>Valparaiso, 6 c. 2 q. £13                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                        |                                                |                                                    |                                               |                                                                                          |                                              |                                                   |                                                                   |                                                                                                                                  |  |  |  |  |
|                                                                                                                                                                                                                                               |                                              |                                                     |                                         |                                            |                                          |                                                 |                                                          |                                                    |                                                                               |                                                                   |                                                  |                                                                                            |                                                                                                                                                             | <b>Ochre</b> —<br>Bahia, 15 brls.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                        |                                                |                                                    |                                               |                                                                                          |                                              |                                                   |                                                                   |                                                                                                                                  |  |  |  |  |
|                                                                                                                                                                                                                                               |                                              |                                                     |                                         |                                            |                                          |                                                 |                                                          |                                                    |                                                                               |                                                                   |                                                  |                                                                                            |                                                                                                                                                             | <b>Oxalic Acid</b> —<br>Constantinople, 5 c. £9<br>Boston, 3 t. 14 105                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                        |                                                |                                                    |                                               |                                                                                          |                                              |                                                   |                                                                   |                                                                                                                                  |  |  |  |  |
|                                                                                                                                                                                                                                               |                                              |                                                     |                                         |                                            |                                          |                                                 |                                                          |                                                    |                                                                               |                                                                   |                                                  |                                                                                            |                                                                                                                                                             | <b>Pail t</b> —<br>Accra, 4 cs.<br>Adelaide, 6 cks.<br>Algoa Bay, 2<br>Antwerp, 6 brls. 6 16 kgs 3 dms.<br>Arecibo, 4 5 pks.<br>Bahia, 15 1 cs. 201 102<br>Beyrout, 15 1,236 63 dms.<br>Bombay, 15 2 cks.<br>Boca, 2 cks.<br>B. Ayres, 75 cs. 36<br>Ceara, 4<br>Colon, 6<br>Demerara, 1 2 190 3<br>Fiume, 46<br>Gd. Canary, 70 331 pks.<br>Iquique, 2<br>Lagos, 2<br>Malmo, 20<br>Mogador, 1 80<br>Monrovia, 5 dms.<br>M. Video 30<br>New York 272<br>Old Calabar, 3<br>Para, 22<br>Pernambuco, 20<br>Ponce, 9<br>Port Natal, 140<br>St. John's. Nfld., 1 103<br>St. Nazaire, 100<br>San Francisco, 120<br>San Juan, 191<br>Sherbrooke, 132<br>Sierra Leone, 60<br>Sydney, 2<br>Tripoli, 15                                                                                                                                                                                                        |                                        |                                                |                                                    |                                               |                                                                                          |                                              |                                                   |                                                                   |                                                                                                                                  |  |  |  |  |
|                                                                                                                                                                                                                                               |                                              |                                                     |                                         |                                            |                                          |                                                 |                                                          |                                                    |                                                                               |                                                                   |                                                  |                                                                                            |                                                                                                                                                             | <b>Fainters Colours</b> —<br>Bremen, 200 bgs.<br>Calcutta, 3 cs 2 cks. 170 kgs.<br>Cape Town, 333 pks.<br>Danzig, 102 bgs.<br>Genoa, 100<br>Hamburg, 44 34 100<br>Jaffa, 3 brls.<br>Lisbon, 1 52 dms<br>Ma. ila, 19 1 10 pks.<br>M. Video, 24<br>Montreal, 37 100 225<br>New York, 2 bxs.<br>Odessa, 25<br>Para, 1<br>Pernambuco, 24 30 5 brls.<br>Philadelphia, 456<br>Pisco, 3 4<br>Presven, 4 cans<br>Rio de Janeiro, 2<br>Rotterdam, 20<br>Salaora, 3 tcs, 8                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                        |                                                |                                                    |                                               |                                                                                          |                                              |                                                   |                                                                   |                                                                                                                                  |  |  |  |  |

## LIVERPOOL.

Period ending June 10th.

|                                                            |                                                                  |                                                                                                                                                                                                                                               |                                              |                                                          |                                                                                                                                             |
|------------------------------------------------------------|------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|----------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Acetate of Iron</b> —<br>Pernambuco, 2 t. 2 c. 1 q. £18 | <b>Albumen</b> —<br>Vera Cruz, 16 c. £80<br>New York, 4 t. 1 455 | <b>Alum</b> —<br>Tacoma, 51 t. £255<br>Beyrout, 3 10 c. 17<br>Galatz, 1 3 6<br>Melbourne, 6 17 2 q. 34<br>Volo, 1 9 2 5<br>Bourgas, 3 19 3 20<br>Callao, 1 5<br>B. Ayres, 24 15 108<br>Piraeus, 2 2 10<br>Pernambuco, 1 3 2 7<br>Lisbon, 5 23 | <b>Alumina Sulphate</b> —<br>Lisbon, 6 c. £5 | <b>Alumin us Cake</b> —<br>Melbourne, 6 t. 8 c. 2 q. £26 | <b>Ammonium Chloride</b> —<br>Valparaiso, 1 t. 16 c. £67<br>Galatz, 3 6<br>Trieste, 3 105<br>Bari, 2 70<br>Beyrout, 1 7 46<br>Ihrail, 11 19 |
|------------------------------------------------------------|------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|----------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|



|                               |            |                |
|-------------------------------|------------|----------------|
| Santander,                    | 15 dms.    | 200 bgs.       |
| Trieste,                      |            |                |
| Tripoli,                      | 9          |                |
| Valparaiso,                   | 25 cs.     |                |
| Vera Cruz,                    |            | 50             |
| <b>Paraffin Wax—</b>          |            |                |
| Catania,                      | 4 bgs.     |                |
| Constantinople,               | 5 cs.      |                |
| Sydney,                       | 5          |                |
| Trieste,                      | 16         | 10             |
| <b>Phosphorus—</b>            |            |                |
| Vera Cruz,                    | 10 c.      | £110           |
| Shanghai,                     | 7          | 50             |
| Rio de Janeiro,               | 6 cs.      | 77             |
| <b>Picric Acid—</b>           |            |                |
| N. Orleans,                   | 2 t. 10 c. | £240           |
| <b>Potash Crystals—</b>       |            |                |
| Oporto,                       | 1 c.       | £8             |
| <b>Potash Salts—</b>          |            |                |
| Genoa,                        | 8 cks.     | £28            |
| <b>Potassium Bicarbonate—</b> |            |                |
| Philadelphia,                 | 1 t. 7 c.  | £33            |
| <b>Potassium Bichromate—</b>  |            |                |
| Smyrna,                       | 5 t. 9 c.  | £226           |
| Rio de Janeiro,               | 2 12       | 2 q. 116       |
| Copenhagen,                   | 5          | 2 12           |
| <b>Potassium Carbonate—</b>   |            |                |
| Newport News,                 | 4 t. 5 c.  | £91            |
| New York,                     | 7          | 123            |
| <b>Potassium Chloride—</b>    |            |                |
| Philadelphia,                 | 10 t.      | £103           |
| Melbourne,                    | 2          | 77             |
| Tampico,                      | 2 10 c.    | 100            |
| Odessa,                       | 8          | 18             |
| Fairwater,                    | 1 15       | 63             |
| Hiogo,                        | 7 10       | 291            |
| Boston,                       | 1 5        | 48             |
| Bari,                         | 2          | 78             |
| Hamburg,                      | 1 9        | 71             |
| Rotterdam,                    | 1          | 39             |
| Ghent,                        | 1          | 39             |
| Naples,                       | 1 5        | 39             |
| Genoa,                        | 2 2        | 87             |
| Ancona,                       | 1 18       | 72             |
| New York,                     | 8 15       | 339            |
| <b>Salt—</b>                  |            |                |
| Adelaide,                     | 10 t.      |                |
| Algoa Bay,                    | 26         | 16 c.          |
| Amsterdam,                    | 1 6        |                |
| Antwerp,                      | 310        | 14             |
| Archangel,                    | 350        |                |
| Baltimore,                    | 547        |                |
| Barbadoes,                    | 25         |                |
| Be in,                        | 14         | 5              |
| Bonny,                        | 4          |                |
| Boston,                       | 1,100      |                |
| B. Ayres,                     | 36         | 14             |
| Buguma,                       | 50         |                |
| Calcutta,                     | 3,093      |                |
| Campellton,                   | 337        |                |
| Cape Town,                    | 50         |                |
| Charlotte Town,               | 500        |                |
| Christiania,                  | 4          |                |
| Degama,                       | 100        |                |
| E. London,                    | 17         | 17             |
| Ghent,                        | 350        |                |
| Gd Bassam,                    | 25         |                |
| Halifax,                      | 200        |                |
| Hamburg,                      | 50 cs.     | 17             |
| Iceland,                      | 40 t.      |                |
| Dyrefjord,                    |            |                |
| Lagos,                        | 123        | 15             |
| Loango,                       | 73         |                |
| Melbourne,                    | 155        |                |
| Marseilles,                   |            | 150 sks.       |
| Monrovia,                     | 32         |                |
| M. Video,                     | 38         |                |
| Montreal,                     | 9,917      |                |
| Newcastle,                    | 309        |                |
| N. Orleans,                   | 65         |                |
| Opoko,                        | 20         |                |
| Philadelphia,                 | 50         |                |
| Pt. Natal,                    | 110        |                |
| Rangoon,                      | 1,018      |                |
| Rio de Janeiro,               | 5          |                |
| Rotterdam,                    | 140        |                |
| St. John's, N. Id.,           | 5          | 11             |
| Salt Pond,                    | 50         |                |
| Shediac, N. S.,               | 40         |                |
| Sierra Leone,                 | 10         |                |
| Stockholm,                    | 117        |                |
| Sydney,                       | 100        |                |
| Valparaiso,                   | 466        | 4              |
| Warri,                        | 5          |                |
| <b>Sulphate—</b>              |            |                |
| Maceio,                       | 4 c.       | £5             |
| <b>Sheep Dip—</b>             |            |                |
| Baltimore,                    | 2 t. 5 c.  | £50            |
| Algoa Bay,                    | 10 dms.    | 10             |
| <b>Soap—</b>                  |            |                |
| Addah,                        | 36 bks.    |                |
| Alexandria,                   | 15         | 70 cs. 18 dms. |
| Algoa Bay,                    | 855        | 100            |
| Amsterdam,                    | 1,600      |                |

|                       |          |                  |
|-----------------------|----------|------------------|
| Antwerp,              | 1,125    |                  |
| Antofagasta,          | 2        |                  |
| Assinee,              | 25       |                  |
| Axion,                | 270      |                  |
| Barbadoes,            |          | 600              |
| Beira,                | 50       |                  |
| Beyrout,              |          | 2                |
| Bombay,               | 1,170    | 82               |
| B. Ayres,             |          | 149              |
| Calcutta,             | 34       | 300 bdl.         |
| Cullera,              |          | 2                |
| Canaria,              | 657      |                  |
| Cape Coast,           | 40       | 2                |
| Cape Town,            | 1,250    | 1,146            |
| Christiania,          | 105      | 200              |
| Copenhagen,           | 7        |                  |
| Delagoa Bay,          | 1,150    |                  |
| Demerara,             | 550      |                  |
| E. London,            | 823      | 50               |
| Ferrol,               |          | 2 cks            |
| Fernale,              | 500      |                  |
| Gibraltar,            | 127      | 100              |
| Gd. Bassam,           | 100      |                  |
| Halifax,              |          | 225              |
| Hamburg,              | 48       |                  |
| Havre,                | 56       | 260              |
| Hong Kong,            | 500      |                  |
| Iquique,              | 220      |                  |
| Lagos,                | 1,210    |                  |
| Kurrachee,            |          | 42               |
| Las Palmas,           | 118      |                  |
| Macassar,             | 600      |                  |
| Malta,                | 80       | 30               |
| Madras,               |          | 5                |
| Menada,               | 1,000    |                  |
| Monrovia,             | 69       |                  |
| Mendoza,              |          | 3                |
| Montreal,             |          | 7 15 frkns       |
| N. Orleans,           | 400      |                  |
| New York,             | 380      | 200              |
| Old Calabar,          | 320      |                  |
| Palma,                | 274      |                  |
| Parnabyba,            | 50       |                  |
| Penang,               | 10       |                  |
| Philadelphia,         |          | 5 brls.          |
| Pt. Elizabeth,        | 600      | 20               |
| Pt. Natal,            | 760      | 320              |
| Rotterdam,            | 510      |                  |
| St. John, N. B.,      | 20       |                  |
| St. John's, N. Id.,   | 64 1/2   | 3                |
| St. Thome,            | 500      |                  |
| San Francisco,        | 200      |                  |
| San Juan,             | 290      |                  |
| Singapore,            | 400      | 615              |
| Teneriffe,            | 145      | 90               |
| Toronto,              |          | 2                |
| Trinidad,             | 600      |                  |
| Valparaiso,           |          | 1                |
| Winnabah,             | 200      |                  |
| Kingston,             | 1,950    | 10               |
| Kingston, Jam.,       | 40       | 4                |
| <b>Soda Alkali—</b>   |          |                  |
| Barcelona,            |          | 50 brls.         |
| Catania,              | 24       |                  |
| Genoa,                | 45       |                  |
| Melbourne,            | 40       |                  |
| Toronto,              | 35       |                  |
| <b>Soda Ash—</b>      |          |                  |
| Antwerp,              | 100 bgs. |                  |
| Baltimore,            | 1,821    | 135 tcs. 17 cks. |
| Barcelona,            |          | 20               |
| Batavia,              |          | 30 brls.         |
| Boston,               |          | 165              |
| B. Ayres,             | 75       | 100              |
| Callao,               |          | 15               |
| Copenhagen,           | 100      |                  |
| Ghent,                |          | 4                |
| Kobe,                 |          | 110              |
| Leghorn,              | 100      |                  |
| Maranham,             |          | 145 40           |
| Melbourne,            |          | 230              |
| M. Video,             |          | 10               |
| Montreal,             | 160      |                  |
| New York,             | 1,496    | 80 tcs 102       |
| Oporto,               | 20 kgs   | 20               |
| Para,                 | 0        |                  |
| Philadelphia,         | 400      | 130              |
| Pireaus,              |          | 50 brls.         |
| Puerto Cabello,       |          | 12               |
| Rio de Janeiro,       | 100      | 40               |
| St. John's, N. Id.,   |          | 45               |
| Samarang,             |          | 28               |
| San Sebastian,        |          | 4                |
| Sourabaya,            |          | 110              |
| Smyrna,               | 55 1/2   |                  |
| Stockholm,            |          | 14               |
| Sydney,               | 8        |                  |
| Vancouver,            | 40 kgs.  |                  |
| Yokohama,             |          | 411              |
| <b>Soda Crystals—</b> |          |                  |
| Boston,               |          | 616 brls.        |
| Calcutta,             | 33 kgs.  |                  |
| Iquique,              | 100      |                  |
| Lisbon,               |          | 5 cks.           |
| Malta,                | 100      |                  |

|                             |                  |             |
|-----------------------------|------------------|-------------|
| M. Video,                   | 30               | 20          |
| Montreal,                   | 240              |             |
| Philadelphia,               | 187              | 420 280     |
| Quebec,                     | 30               |             |
| Rio de Janeiro,             | 8                |             |
| St. John, N. B.,            | 40               |             |
| St. John's, N. Id.,         | 20               | 40          |
| Sydney,                     | 34               |             |
| <b>Sodium Acetate—</b>      |                  |             |
| Naples,                     | 7 crts.          |             |
| <b>Sodium Arseniate—</b>    |                  |             |
| Antwerp,                    | 2 cks.           |             |
| Lisbon,                     | 1                |             |
| <b>Sodium Bicarbonate—</b>  |                  |             |
| Alexandria,                 | 45 kgs. 70 brls. | 8 cks.      |
| Algiers,                    | 12               |             |
| Algoa Bay,                  |                  | 30 bgs.     |
| Antwerp,                    | 141              | 10 brls. 8  |
| Auckland,                   | 100              |             |
| Baltimore,                  | 100              | 170         |
| Barcelona,                  | 110              | 10          |
| Bari,                       | 90               | 4           |
| Bombay,                     | 60               |             |
| Bourgas,                    | 20               |             |
| B. Ayres,                   |                  | 28          |
| Canterbury, N. Z.,          | 50               |             |
| Cartagena, Sp.,             | 25               |             |
| Catania,                    |                  | 10 bgs.     |
| Copenhagen,                 | 125              | 4           |
| Corunna,                    |                  | 25 brls.    |
| Trinidad,                   | 153              | 4           |
| Genoa,                      |                  | 25 bgs. 36  |
| Hamburg,                    | 50               | 31          |
| Kingston, Jam.,             | 15               |             |
| Libau,                      | 120              |             |
| Melbourne,                  | 100              |             |
| Marseilles,                 | 90               |             |
| M. Video,                   | 18               |             |
| Montreal,                   | 140              | 50          |
| Nantes,                     | 50               | 20 brls.    |
| N. Orleans,                 | 300              |             |
| Newport News,               |                  | 30          |
| Palermo,                    | 30               | 5           |
| Pt. Elizabeth,              |                  | 10 bgs. 2   |
| Portland,                   | 25               |             |
| Richmond,                   |                  | 150         |
| Rotterdam,                  | 40               |             |
| St. John's, N. Id.,         | 25               |             |
| Seville,                    | 40               | 10 brls. 20 |
| Singapore,                  |                  | 20          |
| Stamboul,                   | 20               | 16          |
| Stockholm,                  | 125              | 7           |
| Sydney,                     | 10               |             |
| Toronto,                    | 100              |             |
| Trinidad,                   | 200              |             |
| Vancouver,                  | 90               |             |
| Venice,                     | 25               |             |
| Vera Cruz,                  | 50               | 10 bgs.     |
| Wellington,                 | 30               |             |
| Yokohama,                   | 1,000            |             |
| <b>Sodium Bichromate—</b>   |                  |             |
| Lisbon,                     | 1 ck.            |             |
| Pernambuco,                 | 1                |             |
| <b>Sodium Carbonate—</b>    |                  |             |
| Boston,                     | 140 brls         |             |
| New York,                   | 116              |             |
| Porto Alegre,               | 20 kgs.          |             |
| Rotterdam,                  | 60               |             |
| <b>Sodium Chlorate—</b>     |                  |             |
| New York,                   | 60 kgs.          |             |
| <b>Sodium Hyposulphite—</b> |                  |             |
| Alexandria,                 | 5 brls.          |             |
| New York,                   | 5 kgs.           |             |
| Callao,                     | 40               |             |
| <b>Sodium Silicate—</b>     |                  |             |
| Bilbao,                     |                  | 12 brls.    |
| Cape Town,                  |                  | 7 cks.      |
| Constantinople,             | 20               |             |
| Kingston,                   |                  | 10          |
| Malaga,                     | 10               |             |
| Messina,                    | 20               |             |
| M. Thourne,                 | 63               |             |
| Montreal,                   | 32               |             |
| Newcastle,                  |                  | 14 dms.     |
| Op. rto,                    | 15               |             |
| Smyrna,                     |                  | 500 b. s    |
| Sydney,                     | 13               |             |
| Vera Cruz,                  | 4                |             |
| <b>Sodium sulphate—</b>     |                  |             |
| Boston,                     | 100 bgs.         |             |
| <b>Strontia—</b>            |                  |             |
| Hamburg,                    | 2 t. 5 c.        | £70         |
| <b>Sulphur—</b>             |                  |             |
| Pt. Natal,                  | 1 t. 10 c.       | £6          |
| Boston,                     | 300              | 6 489       |
| Constantinople,             | 25               | 4 109       |
| <b>Sulphuric Acid—</b>      |                  |             |
| Pernambuco,                 | 5 c.             | £2          |
| Maranham,                   | 18               | 10          |
| <b>Superphosphates—</b>     |                  |             |
| Gd. Canary,                 | 7 t. 10 c.       | £28         |

|                       |         |               |
|-----------------------|---------|---------------|
| <b>Turpentine—</b>    |         |               |
| Antwerp,              | 20 dms. |               |
| B. Ayres,             | 26      |               |
| Calcutta,             | 50      |               |
| <b>Varnish—</b>       |         |               |
| Hiogo,                |         | 3 cs. 5 brls. |
| Ibrail,               | 40 dms. |               |
| Madras,               | 4       |               |
| Para,                 | 20      |               |
| Pisco,                | 2       |               |
| Pt. Natal,            |         | 50            |
| Salaora,              | 40      | 5             |
| Volo,                 | 1       |               |
| <b>White Lead—</b>    |         |               |
| Bahia,                | 50 kgs. |               |
| B. Ayres,             | 20 cks. |               |
| Valparaiso,           | 9       |               |
| <b>Zinc Chloride—</b> |         |               |
| Halifax,              | 4 t.    | £7            |

## MANCHESTER.

Period ending June 10th.

|                            |               |         |
|----------------------------|---------------|---------|
| <b>Alum—</b>               |               |         |
| Beyrout,                   | 65 sks.       |         |
| Bombay,                    | 84 brls.      |         |
| <b>Ammonium Carbonate—</b> |               |         |
| Rotterdam,                 | 2 kgs.        |         |
| <b>Aniline Colours—</b>    |               |         |
| Bombay,                    | 2 cs.         |         |
| Rotterdam,                 | 4 kgs. 3      |         |
| Hamburg,                   | 1             |         |
| <b>Aniline Oil—</b>        |               |         |
| Hamburg,                   | 2 dms.        |         |
| Rotterdam,                 | 1 tin         |         |
| <b>Benzol—</b>             |               |         |
| Rotterdam,                 | 10 dms.       |         |
| Treport,                   | 30 cks.       |         |
| <b>Carbolic Acid—</b>      |               |         |
| Treport,                   | 182 brls.     |         |
| Rotterdam,                 | 40 cks.       |         |
| <b>Caustic Soda—</b>       |               |         |
| Tunis,                     | 15 dms.       |         |
| <b>Copperas—</b>           |               |         |
| Tripoli, S.,               | 35 brls.      |         |
| Beyrout,                   | 20            |         |
| <b>Cottonseed Oil—</b>     |               |         |
| Tunis,                     | 30 brls.      |         |
| <b>Lamp Black—</b>         |               |         |
| Beyrout,                   | 7 cs.         |         |
| <b>Linseed Oil—</b>        |               |         |
| Beyrout,                   | 5 brls.       |         |
| <b>Magnesium Sulphate—</b> |               |         |
| Bombay,                    | 100 bgs.      |         |
| <b>Manure—</b>             |               |         |
| Paris,                     | 26 bgs.       |         |
| <b>Oxygen—</b>             |               |         |
| Treport,                   | 132 tubes     |         |
| <b>Paint—</b>              |               |         |
| Beyrout,                   | 50 dms.       | 10 kgs. |
| <b>Pitch—</b>              |               |         |
| Antwerp,                   | 583 t. 17 c.  |         |
| <b>Salt—</b>               |               |         |
| Rotterdam,                 | 150 t.        |         |
| <b>Soap—</b>               |               |         |
| Bushire,                   | 10 bks. 1 cs. |         |
| Teheran,                   | 2             |         |
| <b>Sodium Bicarbonate—</b> |               |         |
| Treport,                   | 98 kgs.       |         |
| <b>Starch—</b>             |               |         |
| Copenhagen,                | 10 bgs        |         |
| <b>Tallow—</b>             |               |         |
| Rotterdam,                 | 4 cks.        |         |
| <b>Tar—</b>                |               |         |
| Treport,                   | 30 brls.      |         |
| <b>Tar Oil—</b>            |               |         |
| Treport,                   | 30 brls.      |         |
| <b>Tinucil—</b>            |               |         |
| Rotterdam,                 | 30 cks        |         |
| <b>Vanish—</b>             |               |         |
| Bombay,                    | 1 cs.         |         |
| <b>Zinc Chloride—</b>      |               |         |
| Bombay,                    | 5 cks.        |         |

## HULL.

Week ending June 6th.

|                    |         |  |
|--------------------|---------|--|
| <b>Alkali—</b>     |         |  |
| Bremen,            | 120 bgs |  |
| Leghorn,           | 100     |  |
| Stettin,           | 10 cks  |  |
| <b>Anthracene—</b> |         |  |
| Hel-singfors,      | 50 cks. |  |
| <b>Benzol—</b>     |         |  |
| Amsterdam,         | 34 dms. |  |



**Bleaching Powder—**

|            |         |
|------------|---------|
| Danzig,    | 48 cks. |
| Norroping, | 2       |
| Riga,      | 58      |
| Stettin,   | 40      |

**Borax—**

|              |         |
|--------------|---------|
| Helsingfors, | 21 cks. |
|--------------|---------|

**Caustic Soda—**

|          |          |
|----------|----------|
| Antwerp, | 8 kgs.   |
| Danzig,  | -85 lbs. |
| Genoa,   | 120      |
| Riga,    | 10 cks.  |
| Wyburg,  | 5        |

**Chemicals (otherwise undescribed)**

|                 |        |         |
|-----------------|--------|---------|
| Amsterdam,      | 6 cks. | 30 pks. |
| Alexandria,     | 150    |         |
| Antwerp,        | 6      | 2 cs.   |
| Copenhagen,     | 44     | 15 5    |
| Christiania,    |        | 5       |
| Danzig,         | 5      | 7       |
| Genoa,          | 8      |         |
| Gothenburg,     | 50     | 10      |
| Hamburg,        | 6      | 28      |
| Harlingen,      | 35     |         |
| Helsingfors,    | 4      | 3       |
| Kronenberg,     |        | 6 5     |
| Naples,         | 9      | 5       |
| Rotterdam,      | 31     | 88 231  |
| Stockholm,      | 6      | 5       |
| St. Petersburg, | 6      |         |
| Stettin,        | 2      |         |
| Wyburg,         | 10     |         |

**Coal Products (otherwise undes.)—**

|            |          |
|------------|----------|
| Amsterdam, | 86 brls. |
|------------|----------|

**Cottonseed Oil—**

|              |        |
|--------------|--------|
| Amsterdam,   | 578 c. |
| Antwerp,     | 914    |
| Bremen,      | 782    |
| Christiania, | 34     |
| Danzig,      | 102    |
| Hamburg,     | 656    |
| Kronenberg,  | 331    |
| Leghorn,     | 101    |
| Rotterdam,   | 1,743  |
| Stockholm,   | 200    |
| Stettin,     | 27     |

**Creosote—**

|              |         |
|--------------|---------|
| Helsingfors, | 25 cks. |
| Marseilles,  | 40      |

**Dyestuffs (otherwise undescribed)**

|              |       |          |
|--------------|-------|----------|
| Christiania, | 1 ck. | 25 bgs.  |
| Danzig,      |       | 2 cs.    |
| Rotterdam,   | 1     | 3 6 kgs. |

**Linseed Oil—**

|                |       |
|----------------|-------|
| Amsterdam,     | 93 c. |
| Antwerp,       | 12    |
| Bergen,        | 92    |
| Copenhagen,    | 116   |
| Christiansand, | 34    |
| Christiania,   | 740   |
| Christiansund, | 42    |
| Drontheim,     | 169   |
| Ghent,         | 3     |
| Hamburg,       | 77    |
| Helsingfors,   | 8     |
| Rotterdam,     | 223   |
| Stettin,       | 173   |

**Manure—**

|             |            |
|-------------|------------|
| Gothenburg, | 1,000 bgs. |
|-------------|------------|

**Ochre—**

|          |       |
|----------|-------|
| Dunkirk, | 1 ck. |
|----------|-------|

**Painters' Colours—**

|                 |        |          |
|-----------------|--------|----------|
| Antwerp,        | 4 cks. | 199 pks. |
| Boston, U.S.A., | 12     |          |
| Bremen,         | 11     |          |
| Bergen,         | 6      | 408 dms. |
| Copenhagen,     | 28     | 10       |
| Christiania,    |        | 32 1     |
| Drontheim,      | 26     | 1 cs.    |
| Danzig,         | 26     |          |
| Genoa,          | 45     |          |
| Gothenburg,     |        | 5 1      |
| Hamburg,        | 39     | 5 3      |
| Harlingen,      | 2      |          |
| Helsingfors,    | 270    | 4 14     |
| Hango,          | 5      |          |
| Leghorn,        |        | 27 pks.  |
| Rotterdam,      | 8      | 9 1      |
| Stockholm,      |        | 4 2 cs.  |
| Stettin,        | 10     | 4 2 pks. |
| Wyburg,         | 120    |          |

**Pitch—**

|            |         |
|------------|---------|
| Antwerp,   | 126 t.  |
| Dunkirk,   | 92 cks. |
| Stavanger, | 12      |

**Soap—**

|             |       |
|-------------|-------|
| Gothenburg, | 1 cs. |
|-------------|-------|

**Starch—**

|             |        |
|-------------|--------|
| Bergen,     | 16 cs. |
| Copenhagen, | 250    |

**Tallow—**

|             |        |
|-------------|--------|
| Gothenburg, | 5 cks. |
| Stockholm,  | 22     |

**Tar—**

|              |         |
|--------------|---------|
| Amsterdam,   | 19 cks. |
| Bremen,      | 27      |
| Bergen,      | 5       |
| Copenhagen,  | 27      |
| Helsingfors, | 25      |
| Rotterdam,   | 10      |
| Stockholm,   | 8 1 dm. |
| Wyburg,      | 30      |

**Turpentine—**

|              |         |
|--------------|---------|
| Helsingfors, | 10 cks. |
|--------------|---------|

**Yarnish—**

|                 |       |       |
|-----------------|-------|-------|
| Antwerp,        | 1 ck. | 3 cs. |
| Copenhagen,     | 2     |       |
| Danzig,         | 1     |       |
| St. Petersburg, |       | 6     |
| Christiania,    | 1     |       |
| Hamburg,        | 2     |       |
| Rotterdam,      | 5     |       |

**GLASGOW.**

Week ending June 11th.

**Alumina Sulphate—**

|          |     |
|----------|-----|
| Dunedin, | £33 |
|----------|-----|

**Ammonium Sulphate—**

|          |       |
|----------|-------|
| Antigua, | 25 t. |
| Jamaica, | 7 8 c |
| Hamburg, | 25 7  |
| Antwerp, | 151   |

**Bleaching Powder—**

|            |      |       |
|------------|------|-------|
| Dunedin,   | 7 t. | 6½ c. |
| Melbourne, | 9    | 14½   |

**Borax—**

|            |     |
|------------|-----|
| Canada,    | £36 |
| Melbourne, | 45  |

**Castor Oil—**

|           |     |
|-----------|-----|
| Adelaide, | £34 |
|-----------|-----|

**Caustic Soda—**

|          |       |      |
|----------|-------|------|
| Dunedin, | 23 t. | 6 c. |
|----------|-------|------|

**Citric Acid—**

|          |     |
|----------|-----|
| Dunedin, | £30 |
|----------|-----|

**Coal Products—**

|               |          |
|---------------|----------|
| Carbolic Acid |          |
| Richmond,     | £41      |
| Creosote Oil  |          |
| U.S.A.,       | £55      |
| Christiania,  | 75       |
| Naphtha       | £32      |
| Dunedin,      | £32      |
| Pitch         | £21      |
| Nova Scotia,  | 143      |
| U.S.A.,       | 150      |
| Hamburg,      | 10 t.    |
| Canada,       | 640      |
| Antwerp,      | £120     |
| Gothenburg,   | 27       |
| Tar           | 725      |
| U.S.A.,       |          |
| Christiania,  | 25 brls. |
| Riga,         |          |
| Gothenburg,   |          |

**Coal Products (otherwise undes.)—**

|            |      |
|------------|------|
| Rotterdam, | 7 t. |
|------------|------|

**Cod Oil—**

|            |     |
|------------|-----|
| Dunedin,   | £40 |
| Melbourne, | 117 |

**Copperas—**

|           |     |
|-----------|-----|
| Calcutta, | £76 |
|-----------|-----|

**Dyestuffs (otherwise undes.)—**

|               |      |
|---------------|------|
| Dunedin,      | £303 |
| Montreal,     | 68   |
| Gothenburg,   | 120  |
| Victoria, A., | 26   |

**Extracts—**

|                   |     |
|-------------------|-----|
| Marysville,       | £60 |
| St. John's Nfld., | 31  |
| Norroping,        | 43  |
| Victoria, A.,     | 128 |

**Farina—**

|                 |     |
|-----------------|-----|
| Rio de Janeiro, | £20 |
|-----------------|-----|

**Gelatin—**

|          |     |
|----------|-----|
| Dunedin, | £30 |
|----------|-----|

**Iodine—**

|            |      |
|------------|------|
| Rotterdam, | £260 |
|------------|------|

**Linseed Oil—**

|                   |           |       |
|-------------------|-----------|-------|
| Canada,           | 4 t.      | 4½ c. |
| Cape Town,        | 111 glns. |       |
| Natal,            | 75        |       |
| Wellington, N.Z., | 3 t.      | 2½    |
| Adelaide,         | 82        | ½     |
| E. London,        | 2         | ½     |

**Logwood—**

|                |     |
|----------------|-----|
| Pt. Lyttelton, | £65 |
| Melbourne,     | 27  |

**Magnesium Sulphate—**

|                   |     |
|-------------------|-----|
| Wellington, N.Z., | £20 |
|-------------------|-----|

**Manure—**

|        |       |       |
|--------|-------|-------|
| Spain, | 10 t. | 3½ c. |
|--------|-------|-------|

**Paint—**

|           |     |
|-----------|-----|
| Adelaide, | £78 |
| Hobart,   | 23  |

**Painters' Colours—**

|            |     |
|------------|-----|
| Antwerp,   | £37 |
| Adelaide,  | 30  |
| Calcutta,  | 116 |
| Cape Town, | 95  |
| Durban,    | 106 |
| Melbourne, | 152 |

**Paraffin Wax—**

|           |     |
|-----------|-----|
| Adelaide, | 30  |
| Calcutta, | 116 |

**Plumbago—**

|        |     |
|--------|-----|
| Spain, | £40 |
|--------|-----|

**Potassium Bichromate—**

|              |      |
|--------------|------|
| Amsterdam,   | £463 |
| Christiania, | 196  |
| Antwerp,     | 199  |
| Stockholm,   | qty. |
| U.S.A.,      | 991  |
| Melbourne,   | 43   |

**Rosin Oil—**

|            |     |
|------------|-----|
| Rotterdam, | £20 |
|------------|-----|

**Sheep Dip—**

|            |      |
|------------|------|
| Dunedin,   | £236 |
| Algoa Bay, | 403  |

**Soap—**

|             |      |      |
|-------------|------|------|
| Klerksdorp, | 2 t. | 6 c. |
| Grenada,    | 2    | 10   |
| Jamaica,    | 1    | 5    |

**Sodium Bichromate—**

|         |      |
|---------|------|
| U.S.A., | £156 |
|---------|------|

**Sodium Nitrate—**

|        |     |
|--------|-----|
| Spain, | £50 |
|--------|-----|

**Starch—**

|                 |     |
|-----------------|-----|
| Rio de Janeiro, | £26 |
|-----------------|-----|

**Sulphuric Acid—**

|          |     |
|----------|-----|
| Rangoon, | £50 |
|----------|-----|

**Tallow—**

|            |       |       |
|------------|-------|-------|
| Rotterdam, | 31 t. | 15 c. |
|------------|-------|-------|

**Treacle—**

|             |       |      |
|-------------|-------|------|
| Stockholm,  | 12 t. | 9 c. |
| Sundswall,  | 24    | 6    |
| Algoa Bay,  | 3     | 2½   |
| Gothenburg, | 31    | 15½  |

**Zinc Ashes—**

|            |       |
|------------|-------|
| Rotterdam, | 38 t. |
|------------|-------|

**TYNE.**

Week ending June 6th.

**Alkali—**

|                 |      |       |
|-----------------|------|-------|
| Amsterdam,      | 6 t. | 10 c. |
| St. Petersburg, | 14   | 13    |
| Lihau,          | 9    | 19    |
| Genoa,          | 6    | 2     |
| Rotterdam,      |      | 11    |
| Bergen,         | 2    | 19    |

**Alumina Sulphate—**

|           |      |       |
|-----------|------|-------|
| Montreal, | 4 t. | 10 c. |
|-----------|------|-------|

**Ammonium Chloride—**

|                |       |       |
|----------------|-------|-------|
| St. Petersburg | 16 t. | 14 c. |
| Barcelona,     | 5     | 1     |

**Antimony—**

|            |      |       |
|------------|------|-------|
| Barcelona, | 1 t. | 12 c. |
| Hamburg,   | 1    | 0     |
| Montreal,  | 3    |       |

**Barium Carbonate**

|          |        |       |
|----------|--------|-------|
| Hamburg, | 156 t. | 16 c. |
| Genoa,   |        | 5     |

**Bleaching Powder—**

|              |        |      |
|--------------|--------|------|
| Amsterdam,   | 37 t.  | 9 c. |
| Barcelona,   | 9      | 10   |
| Hamburg,     | 9      | 18   |
| Antwerp,     | 20     | 9    |
| Copenhagen,  | 84     | 14   |
| Rotterdam,   | 36     | 5    |
| Odense,      | 4 cks. |      |
| Harlingen,   | 20 t.  | 4    |
| Christiania, | 20     | 3    |
| Bergen,      | 1      | 9    |
| Trondhjem,   | 10     | 3    |

**Caustic Soda—**

|             |       |      |
|-------------|-------|------|
| Barcelona,  | 95 t. | 12 c |
| Hamburg,    | 9     | 17   |
| Copenhagen, | 1     | 3    |
| Gefle,      | 4     | 18   |
| Genoa,      | 5     | 16   |
| Harlingen,  | 10    | 10   |
| Montreal,   | 14    | 10   |
| Antwerp,    | 4     | 13   |

**China Clay—**

|             |       |      |
|-------------|-------|------|
| Copenhagen, | 10 t. | 1 c. |
|-------------|-------|------|

**Glue—**

|            |      |
|------------|------|
| Trondhjem, | 3 c. |
|------------|------|

**Litharge—**

|            |       |
|------------|-------|
| Amsterdam, | 17 c. |
|------------|-------|

**Manganese—**

|                 |      |       |
|-----------------|------|-------|
| Barcelona,      | 9 t. | 10 c. |
| St. Petersburg, | 9    |       |
| Hamburg,        |      | 2 q.  |
| Genoa,          | 10   |       |
| Antwerp,        | 1    |       |

**Manure—**

|                 |      |       |
|-----------------|------|-------|
| Fredericksdavn, | 9 t. | 16 c. |
| Genoa,          | 10   |       |

**Naphthaline—**

|          |       |       |
|----------|-------|-------|
| Hamburg, | 39 t. | 10 c. |
|----------|-------|-------|

**Paint—**

|             |      |      |
|-------------|------|------|
| Hamburg,    | 1 t. | 6 c. |
| Copenhagen, | 2    | 4    |
| Rotterdam,  | 1    |      |

**Phosphorus—**

|            |      |       |
|------------|------|-------|
| Barcelona, | 1 t. | 16 c. |
|------------|------|-------|

**Soda—**

|              |       |      |
|--------------|-------|------|
| Amsterdam,   | 20 t. |      |
| Antwerp,     | 25    | 2 c. |
| Kanders,     | 10    |      |
| Gothenburg,  | 1     | 19   |
| Gefle,       | 25    | 3    |
| Stockholm,   | 11    | 17   |
| Nakskov,     | 11    | 14   |
| Rotterdam,   | 20    |      |
| Genoa,       | 37    | 10   |
| Christiania, | 10    |      |

**Soda Ash—**

|             |       |       |
|-------------|-------|-------|
| Gothenburg, | 24 t. | 16 c. |
| Rotterdam,  | 1     | 7     |
| Laurvig,    | 10    |       |

**Sodium Bicarbonate—**

|              |      |
|--------------|------|
| Christiania, | 3 t. |
|--------------|------|

**Sodium Hyposulphite—**

|             |      |       |
|-------------|------|-------|
| Barcelona,  | 1 t. | 16 c. |
| Rotterdam,  | 1    | 9     |
| Genoa,      | 4    | 10    |
| Copenhagen, | 1    | 15    |
| Montreal,   | 13   |       |

**Sodium Sulphate—**

|                 |       |      |
|-----------------|-------|------|
| St. Petersburg, | 20 t. | 9 c. |
|-----------------|-------|------|

**Sulphur—**

|            |       |
|------------|-------|
| Gefle,     | 50 t. |
| Rotterdam, | 100   |

**Tallow—**

|          |      |      |
|----------|------|------|
| Hamburg, |      | 8 c. |
| Genoa,   | 5 t. | 1    |

**White Lead—**



## PRICES CURRENT.

WEDNESDAY, JUNE 17TH, 1896.

PREPARED BY MESSRS. HIGGINBOTTOM AND CO., 116, PORTLAND STREET, MANCHESTER.

The values stated are F.O.R. at maker's works, or at usual ports of shipment in U.K. The price in different localities may vary.

| Acids:—                                                                    |                   | £ s. d.      |
|----------------------------------------------------------------------------|-------------------|--------------|
| Acetic, 25 % and 40 % .. .. .                                              | per cwt.          | 6/ & 9/-     |
| Glacial .. .. .                                                            | "                 | 40/-         |
| Arsenic S.G., 2000° .. .. .                                                | "                 | 1 2 0        |
| Fluoric .. .. .                                                            | per lb.           | 0 0 3½       |
| Muriatic (Tower Salts), 30° Tw. .. .. .                                    | per bottle        | 0 0 10       |
| " (Cylinder), 30° Tw. .. .. .                                              | "                 | 0 3 0        |
| Nitric 80° Tw. .. .. .                                                     | per lb.           | 0 0 1½       |
| Nitrous .. .. .                                                            | "                 | 0 0 1½       |
| Oxalic .. .. .                                                             | nett              | 0 0 3½       |
| Phosphoric, 1750° .. .. .                                                  | "                 | 0 1 0        |
| Picric .. .. .                                                             | "                 | 0 0 11       |
| Sulphuric (fuming 50 %) .. .. .                                            | per ton           | 15 10 0      |
| " (monohydrate) .. .. .                                                    | "                 | 5 10 0       |
| " (Pyrites, 168°) .. .. .                                                  | "                 | 3 0 0        |
| " 150° .. .. .                                                             | "                 | 1 5 0        |
| " (free from arsenic, 145°) .. .. .                                        | "                 | 1 7 6        |
| Sulphurous (solution) S.G. 1025 .. .. .                                    | "                 | 3 0 0        |
| Tannic (pure) .. .. .                                                      | per lb.           | 0 1 2½       |
| Tartaric .. .. .                                                           | "                 | 0 1 3        |
| Arsenic, white powdered .. .. .                                            | nett per ton      | 23 0 0       |
| Alum (loose lump) .. .. .                                                  | "                 | 4 10 0       |
| Alumina Sulphate (pure) .. .. .                                            | "                 | 4 12 6       |
| Aluminoferrous .. .. .                                                     | "                 | 2 5 0        |
| Aluminium .. .. .                                                          | per lb.           | 0 2 10       |
| Ammonia, Anhydrous .. .. .                                                 | "                 | 0 1 4        |
| " 880=28° B. .. .. .                                                       | per lb.           | 0 0 2½       |
| " =24° B. .. .. .                                                          | "                 | 0 0 1½       |
| " Carbonate .. .. .                                                        | nett              | 0 0 3        |
| " Muriate .. .. .                                                          | per ton           | 21 15 0      |
| " (sal-ammoniac) 1st & 2nd .. .. .                                         | per cwt.          | 37/- & 35/-  |
| " Nitrate .. .. .                                                          | per ton           | 37 10 0      |
| " Phosphate .. .. .                                                        | per lb.           | 0 0 6½       |
| " Sulphate (grey) London .. .. .                                           | per ton           | 8 2 6        |
| " (grey) Hull .. .. .                                                      | "                 | 8 0 0        |
| Aniline Oil (pure) .. .. .                                                 | per lb.           | 0 0 8½       |
| Aniline Salt .. .. .                                                       | "                 | 0 0 8        |
| Antimony .. .. .                                                           | per ton           | 30 0 0       |
| " (tartar emetic) .. .. .                                                  | per lb.           | 0 0 9½       |
| " (golden sulphide) .. .. .                                                | "                 | 0 0 10       |
| Barium Chloride .. .. .                                                    | per ton           | 7 0 0        |
| " Carbonate (native) .. .. .                                               | "                 | 3 10 0       |
| " Sulphate (native levigated) .. .. .                                      | "                 | 42/6 to 65/- |
| Bleaching Powder, 35 % .. .. .                                             | nett              | 6 15 0       |
| " Liquor, 7 % .. .. .                                                      | "                 | 3 10 0       |
| Bisulphide of Carbon .. .. .                                               | "                 | 12 0 0       |
| Chromium Acetate (crystal) .. .. .                                         | per lb.           | 0 0 6        |
| Calcium Chloride .. .. .                                                   | per ton           | 2 2 6        |
| China Clay (at Runcorn) in bulk .. .. .                                    | "                 | 15/- to 30/- |
| Coal Tar Products and Dyes:—                                               |                   |              |
| Alizarine (artificial) 20 % .. .. .                                        | nett per lb.      | 0 0 7        |
| Magenta .. .. .                                                            | "                 | 0 3 9        |
| Anthracene, 30 % A, f.o.b. London .. .. .                                  | per unit per cwt. | 0 0 11½      |
| Benzol, 90 % .. .. .                                                       | per gallon        | 0 2 9        |
| " 50/90 .. .. .                                                            | "                 | 0 2 4½       |
| Carbolic Acid (crystallised 40°) .. .. .                                   | per lb.           | 0 0 7        |
| " (crude 60°) .. .. .                                                      | per gallon        | 0 2 2        |
| Creosote (ordinary) .. .. .                                                | "                 | 0 0 1        |
| " (filtered for Lucigen light) .. .. .                                     | "                 | 0 0 1½       |
| Crude Naphtha 30 % @ 120° C. .. .. .                                       | "                 | 0 0 8        |
| Grease Oils, 22° Tw. .. .. .                                               | per ton           | 2 10 0       |
| Pitch, f.o.b. Liverpool or Garston .. .. .                                 | "                 | 1 12 0       |
| Solvent Naphtha, 90 % at 160° .. .. .                                      | per gallon        | 0 1 3        |
| " Lucigen " and " Wells " Oils .. .. .                                     | "                 | 0 0 2        |
| Copper .. .. .                                                             | per ton           | 48 12 6      |
| " Sulphate .. .. .                                                         | "                 | 17 15 0      |
| " Oxide (copper scales) .. .. .                                            | "                 | 42 10 0      |
| Glycerine (crude) .. .. .                                                  | "                 | 36 0 0       |
| " (distilled S.G. 1250°) .. .. .                                           | "                 | 75 0 0       |
| Iodine .. .. .                                                             | nett, per oz.     | 0 0 9        |
| Iron Sulphate (copperas) .. .. .                                           | per ton           | 1 7 6        |
| " Sulphide (antimony slag) .. .. .                                         | "                 | 2 0 0        |
| Lead (sheet) for cash .. .. .                                              | "                 | 12 2 6       |
| " Litharge Flake (ex ship) .. .. .                                         | "                 | 14 10 0      |
| " Acetate (white) .. .. .                                                  | "                 | 21 10 0      |
| " brown .. .. .                                                            | "                 | 15 0 0       |
| " Carbonate (white lead) pure .. .. .                                      | "                 | 16 0 0       |
| " Nitrate .. .. .                                                          | "                 | 19 0 0       |
| Lime, Acetate (brown) (ex ship) .. .. .                                    | per ton           | 4 2 6        |
| " (grey) (ex ship) .. .. .                                                 | "                 | 7 10 0       |
| Magnesium (ribbon and wire) .. .. .                                        | per oz.           | 0 2 1        |
| " Chloride (ex ship) .. .. .                                               | per ton           | 2 7 6        |
| " Carbonate .. .. .                                                        | per cwt.          | 1 17 6       |
| " Calcined Magnesia .. .. .                                                | per ton           | 9 15 0       |
| " Sulphate (Epsom Salts) .. .. .                                           | per ton           | 2 15 0       |
| Manganese, Sulphate .. .. .                                                | "                 | 16 10 0      |
| " Borate .. .. .                                                           | per cwt.          | 2 15 0       |
| " Ore, 70 % .. .. .                                                        | per ton           | 3 15 0       |
| Methylated Spirit, 61° O.P. .. .. .                                        | per gallon        | 0 1 8        |
| Naphtha (Wood), Solvent .. .. .                                            | "                 | 0 3 11       |
| " Miscible, 60° C.P. .. .. .                                               | "                 | 0 3 11       |
| Oils:—                                                                     |                   |              |
| Cotton-seed .. .. .                                                        | per ton           | 17 0 0       |
| Linseed .. .. .                                                            | "                 | 20 0 0       |
| Petroleum, American .. .. .                                                | per gallon        | 0 0 6½       |
| Stearine .. .. .                                                           | per ton           | 21 15 0      |
| Phosphorus (yellow) .. .. .                                                | per lb.           | 0 2 2        |
| " (red) .. .. .                                                            | "                 | 0 2 8        |
| Potassium (metal) .. .. .                                                  | per oz.           | 0 3 7        |
| " Bichromate .. .. .                                                       | nett per lb.      | 0 0 4½       |
| " Carbonate, 90% (ex ship) .. .. .                                         | per ton           | 16 15 0      |
| " Chlorate .. .. .                                                         | per lb.           | 0 0 4½       |
| " Cyanide, 98% .. .. .                                                     | "                 | 0 1 2        |
| " Hydrate (Caustic Potash) 90 % .. .. .                                    | per ton           | 24 10 0      |
| " (Caustic Potash) 75/80 % .. .. .                                         | "                 | 20 10 0      |
| " (Caustic Potash) 70/75 % .. .. .                                         | "                 | 19 10 0      |
| " Nitrate (refined) .. .. .                                                | per cwt.          | 1 1 6        |
| " Permanganate .. .. .                                                     | per cwt.          | 3 7 6        |
| " Prussiate Yellow .. .. .                                                 | per lb.           | 0 0 6½       |
| " Sulphate, 90 % (ex ship) .. .. .                                         | per ton           | 9 15 0       |
| " Muriate, 80 % (do.) .. .. .                                              | "                 | 8 10 0       |
| Silver (metal) .. .. .                                                     | per t.            | 0 2 7½       |
| Sodium (metal) .. .. .                                                     | per lb.           | 0 2 1        |
| " Carb. (refined Soda-ash) 48 % .. .. .                                    | nett per ton      | 4 15 0       |
| " (Caustic Soda-ash) 48 % .. .. .                                          | "                 | 4 5 0        |
| " (Carb. Soda-ash) 48 % .. .. .                                            | "                 | 4 0 0        |
| " (Alkali) 58 % .. .. .                                                    | "                 | 3 15 0       |
| " (Soda Crystals) .. .. .                                                  | "                 | 2 0 0        |
| " Acetate (ex-ship) .. .. .                                                | "                 | 14 7 6       |
| " Arseniate, 45 % .. .. .                                                  | "                 | 15 0 0       |
| " Chlorate .. .. .                                                         | per lb.           | 0 0 6        |
| " Borate (Borax) .. .. .                                                   | net, per ton      | 20 0 0       |
| " Bichromate .. .. .                                                       | per lb.           | 0 0 3½       |
| " Hydrate (77 % Caustic Soda) (f.o.b.) net pr. ton .. .. .                 | "                 | 9 7 6        |
| " (74 % Caustic Soda) .. .. .                                              | "                 | 8 7 6        |
| " (70 % Caustic Soda) .. .. .                                              | "                 | 7 7 6        |
| " (60 % Caustic Soda) .. .. .                                              | "                 | 6 7 6        |
| " (60 % Caustic Soda, liquor 92° Tw) .. .. .                               | "                 | 4 0 0        |
| " (f.o.r.) net per ton .. .. .                                             | "                 | 13 10 0      |
| " (60 % Caustic Soda, powdered, 99 % hydrate) (f.o.r.) net per ton .. .. . | "                 | 6 10 0       |
| " Bicarbonate .. .. .                                                      | "                 | 5 10 0       |
| " Hyposulphite .. .. .                                                     | "                 | 15 0 0       |
| " Manganate, 25 % .. .. .                                                  | "                 | 0 7 10½      |
| " Nitrate (95 %) ex-ship Liverpool .. .. .                                 | per cwt.          | 30 0 0       |
| " Nitrite, 98 % .. .. .                                                    | per ton           | 12 15 0      |
| " Phosphate .. .. .                                                        | "                 | 4 10 0       |
| " Silicate (glass) .. .. .                                                 | per ton           | 3 10 0       |
| " (liquid, 100° Tw.) .. .. .                                               | "                 | 3 10 0       |
| " Stannate, 40 % .. .. .                                                   | per cwt.          | 3 2 9        |
| " Sulphate (Salt-cake) .. .. .                                             | per ton           | 1 3 6        |
| " (Glauber's Salts) .. .. .                                                | "                 | 1 10 0       |
| " Sulphide .. .. .                                                         | "                 | 6 13 0       |
| " Sulphite .. .. .                                                         | "                 | 5 15 0       |
| Strontium Hydrate, 100 % .. .. .                                           | "                 | 8 0 0        |
| Sulphocyanide Ammonium, 95 % .. .. .                                       | per lb.           | 0 0 6½       |
| " Barium, 95 % .. .. .                                                     | "                 | 0 0 4½       |
| " Potassium .. .. .                                                        | "                 | 0 0 7        |
| Sulphur (Flowers) .. .. .                                                  | per ton           | 6 5 0        |
| " (Roll Brimstone) .. .. .                                                 | "                 | 5 10 0       |
| " Brimstone: Best Quality .. .. .                                          | "                 | 3 12 6       |
| Superphosphate of Lime (26 % .. .. .                                       | "                 | 2 17 6       |
| Tallow .. .. .                                                             | "                 | 19 10 0      |
| Tin Crystals .. .. .                                                       | per lb.           | 0 0 3        |
| " English Ingots .. .. .                                                   | per ton           | 65 0 0       |
| Zinc (Spelter) .. .. .                                                     | "                 | 18 5 0       |
| " Chloride (solution, 100° Tw.) .. .. .                                    | "                 | 5 2 6        |



# THE CHEMICAL TRADE JOURNAL AND OIL, PAINT and COLOUR REVIEW.

Publishing Offices: 32, BLACKFRIARS STREET, MANCHESTER.

No. 475.

SATURDAY, JUNE 27, 1896.

Vol. XVIII.

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## LATE ADVERTISEMENTS.

**SOAP BOILER** Wants Situation, well up in hard and soft domestic Soaps; also Toilet. Eight years reference from one maker. Address, "SOAP," *Chemical Trade Journal* Office, Manchester.

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Advertisements intended for insertion in the current week's issue should reach the office by **Thursday morning** at the latest.

## CURRENT TOPICS.

### THE COAL CRISIS.

AN important meeting relative to the coal trade has been held this week, the outcome of which appears to foreshadow the future of the Conciliation Board. At this juncture, therefore, it will perhaps be as well to review the position of the contending parties.

The miners are very firm in their requirements. Practically they insist on the minimum wage being the present one, which is thirty per cent. above the wage ruling in 1888. On these terms they are desirous that the Board shall continue in force until 1898.

On the other hand, the masters think the Board ought to have the power to lower the minimum as now arranged by ten per cent., if the state of the trade renders it necessary. As an off-set to this concession the masters state that they will be willing to raise the maximum wage by ten per cent. This certainly sounds a fair offer, but looking at it in the light of the prospective state of trade, it is undoubtedly a rather left-handed gift.

The miners have not been slow to perceive this, and it must be admitted that the probabilities are that they are not far out in stating that the benefits held out are useless, as it is very improbable that the maximum will ever be reached, while the reduction of the minimum wage by the ten per cent. would take place very shortly.

Numerous ways of compromising matters have been hinted at as being courses that might possibly, if not probably, be acted on at Wednesday's meeting, but these need not be entered into here, as the result of the meeting speaks for itself. There was every reason to suppose that the masters were anxious to prolong the life of the Board, but the outcome of the meeting is calculated to turn opinion in the opposite direction. Though, as officially stated, the whole business done was to discuss matters and then adjourn for a fortnight, yet there are intimations that the deadlock is more uncompromising than ever, and that the adjournment may be taken as denoting the first step towards the dissolution of the Board.

### BORAX AND AMMONIA, LIMITED.

Two well-known companies have this week been candidates for honours in the company conversion line. Associated with borax we find the Redwood Chemical Works at Kennington Green and Belvedere, Kent, which were founded by the late Dr. Redwood. It appears that these works are to be amalgamated with the Pacific Coast Borax Company, of San Francisco, U.S.A. A number of properties are to be acquired, amounting in all to thirty-one thousand acres. For the production of refined borax the plant at Alameda, on San Francisco Bay, and the newly-acquired works in Kent will be employed. It is true that the word borax has a somewhat ominous ring to the ears of investors in this country since the "Harmony" company left such discord behind it. It would



seem that competition is also rife in the States, as the Pacific have been selling at a lower price so as to popularise their product. This has had a very marked effect on their profits, as between 1892 and 1895 they fell from about £89,300. to £53,571. The increase in the sales from about 7½ to 9½ million pounds during the same period tends to show that their object is being realised. The capital of the combined companies is £510,000., divided into 20,000 six per cent. cumulative shares of ten pounds each, and 31,000 ordinary shares of the same denomination.

The other company is more of the nature of a conversion pure and simple, as will be seen under the heading of "New Companies." We refer to the conversion of the business of Messrs. Forbes, Abbott, and Lennard. The change is of little interest to the investing public, but it is noteworthy to the chemical trade.

#### TARRY MATTERS.

Tar contracts seem to be very contentious things. In connection with tar, or the contracts for the same, there has been trouble lately at Bolton. In conjunction with gas liquor it has also been the centre of interest in Manchester, and now it is seemingly troubling the Salford Borough Council.

The position of the Corporation in regard to the various statements made against them is not very clear, as practically nothing definite can be ascertained. There is no doubt that changes are contemplated, and, of course, the old hands want to know the reason why. It is suggested that the contracts have not been duly advertised, but pending more precise information on this point, it is only fair to say that if it is so, it is a most singular departure from the usual course. Taking into consideration the position as a whole, it seems a pity that both sides after obtaining adequate information cannot then meet to discuss matters. There is reason to believe that if this course were pursued, there would not be a great deal left to quarrel over when the discussion came off. If there were trustworthy weapons would be to hand to fight with.

## Parliamentary Jottings.

#### STEEL RAILWAY SLEEPERS IN INDIA.

In the House of Commons last week Mr. Brigg asked the Secretary of State for India whether he had any information as to the cause of the reported failure of rolled steel sleepers in use on the Indian State railways or the other public railways in that country; and, if correct, whether such failure was confined to any particular district.

Lord G. Hamilton replied that so far as his information went there were only three cases in which the employment of steel sleepers had given unsatisfactory results. As to two, the cause was said to be the saline quality of the earth in which they were laid; and in the third case the deterioration was attributed to some defects of ballast and the method of laying.

**NEW TECHNICAL SCHOOLS FOR NORTHWICH.**—Northwich is about to be provided with technical schools at the expense of Sir Joseph Verdin, Bart. Mr. William Molyneux, of Northwich, is to be the builder, his tender of £5,800. having just been accepted. In 1890 Sir Joseph Verdin settled £27,000. to relieve cases of extreme hardship caused by subsidence in the Cheshire salt district, but on the passing of the Compensation Act the necessity for this ceased. Under a scheme sanctioned by the Charity Commissioners, Sir Joseph Verdin applied the fund to other purposes, chiefly educational. A sum of £12,000. was set apart for the provision of technical and intermediate schools and gymnasia at Winsford and Northwich. The Winsford school was built last year at a cost of about £8,000., the money in excess of the amount derived from the trust being found by Sir Joseph Verdin. It is estimated that the Northwich schools will cost £9,000., and they will be handed over to the local authorities free of encumbrance twelve months hence.

## The Patent List.

*This list is compiled from Official sources in the Manchester Technical Laboratory, under the immediate supervision of George E. Davis and Alfred R. Davis, who report professionally upon the value of Chemical Patents.*

#### APPLICATIONS FOR ENGLISH LETTERS PATENT.

- Preventing the Sickening of Mercury in Amalgamating Machines. J. T. Penny and J. Dungey. 12,519. June 8.  
Improvements in Horizontal Coke Ovens. O. Imray. 12,535. June 8.  
Apparatus for Destroying Obnoxious Fumes and Recovering Distillation Bye-products. S. G. Merrick and H. L. Washburn. 12,572. June 8.  
Improvements in Sewage Disposal. R. Johnston. 12,593. June 9.  
Universal Fuel Injector. A. Bryce. 12,628. June 9.  
Apparatus for Washing and Compressing Sulphurous Acid and other Gases. E. Porak. 12,643. June 9.  
Manufacture of Multiple Pulp Papers. W. A. Kershaw and The Medway Paper Mills Co., Ltd. 12,682. June 9.  
Waterproofing Wood, Paper, and Fabrics. S. Bennet. 12,693. June 9.  
Improved Sewage Filtering Presses. W. T. Whitehead and J. Wolstenholme. 12,735. June 10.  
Dissolving and Drying Phosphates, etc. J. Milne. 12,765. June 10.  
Apparatus for Manufacturing Producer and Water Gases. C. Whitfield. 12,771. June 10.  
Machinery for Granulating Oil Cakes, etc. J. Evans. 12,818. June 11.  
Artificial Fuel. H. Hellewell. 12,840. June 11.  
Improvements in Smoke Consumers. E. T. Thomas and Melhado. 12,868. June 11.  
Cement and Lime Kilns. W. S. Akerman. 12,889. June 11.  
Apparatus for Manufacture of Acetylene. S. Earl. 12,900. June 11.  
Apparatus for Separating and Collecting Dust. W. P. Thompson. 13,006. June 12.  
Extracting Gold. J. B. Torres. 13,034. June 13.  
Improved Manufacture of Dyes. H. R. Vidal. 13,093. June 13.  
Manufacture of Chromium and similar Alloys. E. A. G. Street. 13,117. June 13.

#### ABSTRACTS OF LATEST COMPLETE SPECIFICATIONS.

*These abstracts are specially prepared for the Chemical Trade Journal, and ALL RIGHTS of publication are RESERVED. This is the earliest series of abstracts of Chemical and allied patents accessible to the public.*

Improvements in or Relating to the Collection and Utilisation of Air-free Carbonic Acid Gas from Fermentation, and Apparatus therefor. A. J. Boulton, 323, High Holborn, London, E.C. (communicated by The Pabst Brewery Co., Milwaukee, Wisconsin, U.S.A.). Eng. Pat. 3,098. February 11, 1895.

This patent deals somewhat elaborately with a method for collecting the carbon dioxide given off during the process of brewing. There is a drawing showing the sectional elevation of a three-storey brewery and the disposition of the plant. The main feature is the arrangement by which the fermenting tubs are covered in. A sliding dome works in the tub like a gasometer. When lowered into the liquor to be fermented the whole of the air is expelled and the subsequently generated carbon dioxide collected free from air. The gas is drawn off through a suitably disposed vent, the gas being put under pressure by lowering the dome or holder. There is also a description of a plant for carbonating liquids with the carbon dioxide, so that the plant as described in detail in the specification covers the dual claims of the patent.

Process for Preventing the Chemical Action of Acids and other Corrosive Liquids on Metal Containers, Conduits, and the like. C. A. Jessen, 77, Chancery-lane London (communicated by Alf. Sinding-Larsen, 49, Huitfeldts Gade, Christiania). Eng. Pat. 12,310. June 25, 1895.

The acid resisting linings used in certain chemical operations are costly and troublesome. The inventor proposes to obviate their use entirely, and has taken advantage of the fact that the chemical action of two substances upon one another depends upon the electrical tension between them. In the case of cellulose boilers the shell is connected to one pole of a dynamo, and an axial electrode suitably supported and insulated inside the boiler is connected to the other pole. The process is not easily applicable in cases where the contamination of the product by metallic salts is objectionable. The general principle of application, apart from its special adaptability for cellulose boilers, may be stated as follows:—The metallic container is placed in an electrical circuit of like polarity, the other pole being formed by a chemically indifferent electrode immersed in the liquid in the vessel. Special care must be exercised in the regulation of the current intensity.

Improved Method for Producing Nitrides and Ammonia. H. Mehner, Savigny Platz, 5, Charlottenburg. Eng. Pat. 12,471. June 27, 1895.

Oxides of boron, silicon, magnesium, titanium, and vanadium, and similar compounds that are capable of combining with nitrogen at high temperatures are heated with coke in an electrical furnace, a current



of nitrogen or generator gas being kept passing all the time. The oxygen is attacked by the carbon, leaving the basic radicles free to combine with the nitrogen to form the nitride. A high tension current must be employed. A good deal of attention is paid to the discussion of the difficulties that stand in the way of using any source of heat other than the electric arc. If it is not possible to obtain a high tension current, a low tension can be used in certain instances. Thus, in the case of silicon nitride, if the sand is injected in a uniform jet, instead of being simply mixed previously with the coke, the desired reaction can be attained.

**Improved System for the Manufacture of Coke, the Construction of Coke Ovens, and the Recovery of Bye-products from the same.** J. T. Key, Royston, near Barnsley, and W. S. Key, Winthrop Mass, U.S.A. Eng. Pat. 10,356. May 27, 1895.

The construction of the ovens is very fully dealt with, special bricks being used and described in detail. For such *minutiae* the specification must be consulted. The leading features of the method of construction are as follows:—An ingeniously built, perforated floor allows for the downward passage of the gases, oils, &c., through which they find their way into the main outlet pipe or flue. There are also radial flues which are distributed over the bottom of the ovens, giving an even distribution when these same flues and perforations are utilised for the upward injection of steam. The perforated air blocks for admitting air to all parts of the oven are neat and handy. The steaming process is set in operation when the coke is ready to be withdrawn. It serves a double purpose, desulphurising the coke and clearing the flues and perforations in the bottom of the ovens. There are nine figures.

**Process and Apparatus for Separating and Otherwise Treating Oils and like Liquids.** G. Mitchell, 47, Victoria-street Westminster, S.W. Eng. Pat. 17,239. September 16, 1895.

The oil to be clarified is passed through a syphon, the ascending or short leg of which is provided with a water or steam jacket as the conditions may require. The short leg is fitted with a series of cone-shaped pipes, the small ends looking down into the large ends throughout the series. The oil as it undergoes the hot treatment becomes less viscid and the impurities settle into the cones, the pure oil rising to the top through the annular space between the wall of the syphon leg and the cone-shaped pipes. In the cold treatment the position of these cones is just reversed, and the oil sinks while the impurities rise and are syphoned off. In the former treatment the oil is also freed from extraneously acquired moisture. There are eight figures.

**Improvements in Varnish and in the Mode of Manufacture of the same.** E. W. Barnsley, Century Varnish Works, Western-road, Birmingham. Eng. Pat. 8,267. April 20, 1895.

The method of manufacture as described is somewhat involved and lengthy, but a superior product is claimed. Briefly, the process consists in preparing a quantity of thin amber oil and thick oil. Pale Turkey amber is boiled in well seasoned Baltic linseed oil, the temperature being kept at 450° F. After one day two-thirds are pumped out for use and constitute the thin oil. The temperature of the remaining third is raised to 550°, and not allowed to exceed 580°, and gives the thick oil. African fossil gum animi is now run down in a pot and the thin oil gradually added until the two are thoroughly amalgamated. The fire is drawn, the product thinned with genuine American turpentine, and the whole run to the store tanks. When cold add powdered magnesia and allow to stand six months. The clear portion is then drawn off and mixed with one-tenth per cent. of the thick amber oil, and powdered litharge sprinkled in. After storing for another six months at a temperature of 90° to 95° F. the varnish will be fit for sending out. The exact quantities are given.

**Improvements Relating to the Production of Cyanogen Compounds and to the Preparation of Materials for use therein.** Dr. A. Frank, 80, Libnitz-strasse, Charlottenburg, and Dr. N. Caro, 31, Calvin-strasse Berlin. Eng. Pat. 15,066. August 10, 1895.

Advantage is taken of the fact that carbides when heated to a proper temperature in the presence of steam combine with nitrogen to form cyanides. Considerable attention is paid to the preparation of the carbides employed. A modification is described in which the nitrogen acts upon the carbides of the alkaline earths in the presence of salts of the alkaline earths or alkalis, and steam. A dark red heat is the best to employ, it having been found that the lower the temperature the slower the reaction. A series of retorts connected together are necessary to obtain the best results from the nitrogen.

**A New or Improved Process for the Treatment of Aluminous Ores and Silicious Matters.** W. T. Whiteman, 7, Staple Inn, London (communicated by the Compagnie Générale d'Alumine Exploitations des Brevets F. Raynaud (Soc. Anon.), 75, Rue de Venise, Brussels). Eng. Pat. 8,072. April 16, 1896.

The invention is based upon the reaction that takes place between aluminous or silicious ore, in the presence of a sulphide capable of com-

binning with  $Al_2O_3$  or  $SiO_2$ , under the action of steam. A mixture of a sulphate and carbon answers as well as a sulphide.

Aluminate of soda is formed when bauxite and sodium sulphide are heated in a retort at a dull red heat in the presence of steam, sulphuretted hydrogen being given off. If sulphate of soda is also added the sulphur is given off as vapour and not as  $H_2S$ . The iron present in the bauxite does not interfere with the reaction. In the manufacture on the commercial scale the ore and sulphide are made into briquettes, which when treated yield, on lixiviation, a clear solution of aluminate of soda. The  $H_2S$  given off can be utilised by passing it over briquettes of aluminous ore and crushed coke heated in retorts, whereby sulphide of aluminium is formed. The presence of a little oxide of an alkali or alkaline earth assists the reaction. By adding a little sulphide of lead and a quantity of lead sulphate, and then heating to bright redness, metallic aluminium and sulphur dioxide are obtained.

## ARSENIC IN RECTIFIED VITRIOL.

By G. HATTENSAUER.

THE smallness of the amount of arsenic necessitates the employment of large quantities of vitriol. The literature of the subject is almost exclusively confined to the reactions of hydrogen sulphide and arsenious and arsenic acids or their salts. Authors note the conditions favourable to a rapid and complete precipitation of arsenic by hydrogen sulphide, but solutions of suitable acidity are supposed to be under examination. Even the instructions given in technical handbooks have been found faulty, since the dilution with water precipitates the lead incompletely as  $PbSO_4$ , and what is precipitated is most difficult to filter off. A further disadvantage is that the after treatment with hydrogen sulphide may precipitate other bases than arsenic, and the arsenic precipitate is usually a mixture of arsenic tri- and penta-sulphides with free sulphur.

All these difficulties may be avoided if use be made of the property of arsenic, of being quickly and completely precipitated from solutions containing large excess of hydrochloric acid, and if at the same time attention be given to the strength of the acid solution used for precipitation.

The author used for his experiments an acid of sp. gr. 1.815 at 22.5 deg. C. 500 c.c. of this acid were cooled and diluted with 500 c.c. of water. An acid of sp. gr. 1.46 at 15° was produced. 500 c.c. of dilute hydrochloric acid (1.2) were then added to 500 c.c. of the diluted vitriol, the cooling being continued. The author finds that a greater excess of hydrochloric acid than the above has no detrimental effect upon the after precipitation of the arsenic; still the above amount is sufficient to prevent either lead sulphate or lead sulphide from being precipitated, this prevention being the object of its addition. The liquid, which must be cooled as far as possible and kept at a low temperature, is now subjected to a rapid stream of hydrogen sulphide, continuing it at least for 45 minutes. It is better to allow an extra 15 minutes, and then the arsenic pentasulphide, which should be of brilliant yellow colour and curdy, may be immediately filtered off. The degree of dilution obtained by following the directions given above is one which leaves the filter paper unattacked by the acids. No lead was found in the washed precipitate, although the vitriol contained ten times as much lead as arsenic. The precipitate consists, according to Brauner, and Tomicek and Neber, of pure arsenic pentasulphide. The further treatment of this precipitate is carried out in the usual way, according as one desires to weigh it as the sulphide, the oxide, or as magnesium arseniate.

The author concludes by stating that, using his method, the determination of arsenic in concentrated vitriol can be completed in three to four hours, and that it is, therefore, one of the most rapid gravimetric determinations known.

**DURHAM COAL OUTPUT.**—A Blue book published recently containing the report of the inspector of mines for the Durham district during 1895, shows that the output of mineral during the year was 27,525,371 statute tons, being a decreased output of coal of 950,727 tons.

**THE CHESHIRE SALT TRADE.**—Compared with May, 1895, the shipments of white salt for the past month show a decrease of 17,478 tons. It should be remembered, however, that May of last year was the best month known for a long period, the tonnage reaching 83,012, compared with an average for the past five years of 68,299 tons. There is promise of a great improvement during the present month.

**CALCIUM CARBIDE AND MAGNESIUM NITRIDE.**—Rossel and Franck find that when calcium carbide is mixed with magnesium powder and heated over a Bunsen flame, there is at first a small flame due to the combustion of the carbon and the calcium; and then the mass glows brightly, and that the magnesium, when the operation is effected in the open air, it almost wholly converted into pure nitride of magnesium. The nitrogen of the air has thus been absorbed; and when the mass is put in water, magnesium oxide is formed while ammonia is evolved.



## EXHIBITS AT THE ROYAL SHOW.

(By SPECIAL COMMISSIONER.)

THE 57th show of the Royal Agricultural Society of England, which has been held this week at Leicester, has proved a genuine success. It is 28 years since the show was held at this town, the present being the second time that the show has been held there.

There is no need to deal further with the history of the show, and we shall proceed forthwith to those exhibits that are of interest to our readers. The fertilizing and kindred trades are well represented, as is also the agricultural machinery section. In the latter there is a great similitude in the exhibits. We shall deal first with the

## FERTILIZING SECTION.

LAWES' CHEMICAL MANURE CO. (London) have an interesting and striking stand. A feature is made of their compound fertilizers for barley and oats. Sheep dips and disinfectants are likewise a prominent feature.

JEVES' SANITARY COMPOUNDS CO. (London) have their usually attractive show of disinfectants, soaps, ointments, &c. Sheep dips are a thing to which they are giving special prominence in conjunction with the apparatus for dipping.

PERMANENT NITRATE COMMITTEE (London) have a particularly useful as well as a most interesting exhibit. The main object is to disseminate information on the proper use of nitrate of soda as a fertilizer. In addition to a number of specimens of nitrate of soda of 95% and 96% purity, the raw caliche from which it is obtained, and that most important product iodine, there are tables and blocks showing the increase in the consumption. It appears that at present France is the country that is making the most headway in this particular connection. There is also a collection of photographs, illustrating the crops grown by the aid of nitrate, and some comparative photographs indicating the difference between cabbages and similar produce grown with varying proportions of nitrate. The consumption last year was a little over one million tons.

THE SALT UNION, LTD. (Liverpool), have a stand devoted to the display of the uses of salt for agricultural purposes, dairy use, and cattle feeding. They also show a "Saltunia" soap.

THE AFRICAN OIL MILLS CO., (Liverpool), have an excellent show of feeding cakes of all kinds, and also have on view samples of oil expressed by exhibitors.

THE ANGLO-CONTINENTAL GUANO CO. (London), make a brave show of their well-known guano, sulphate of ammonia, bone manure, basic slag, kainit, besides many specially prepared compound manures.

MESSRS. S. MEGGETT AND SONS, LTD. (Mansfield, Notts), have an excellent collection of specially prepared manures for grass, turnips, wheat, mangolds, peas, beans, &c. They also show guano, feeding cakes, and general horticultural seeds. The "Victory" concentrated fertilizer is a speciality.

THE AGRICULTURAL AND HORTICULTURAL ASSOCIATION, LTD. (London), have an instructive as well as an interesting exhibit. Their great feature is the supply of pure and reliable seeds. Apart from this, however, particular attention is paid to compound cakes of the "One and All" brand, and complete fertilizers, based on scientific investigations, intended to affect the growth of full crops without undue exhaustion of the soil. Their number is great, almost every conceivable plant being provided for. Another item of interest is a table showing the principal crops, how much can be grown per acre, and their requirements, expressed in percentages of nitrogen, phosphoric acid, and potash. All the manures are sold on a guaranteed analysis.

Before leaving this section reference ought to be made to a decidedly novel exhibit, which is that of the LEICESTER BACTERIOLOGICAL INSTITUTE, which is practically identical with Dr. J. Andrew Turner. The exhibit was a most popular one, and was thronged. Pure cultures of the chief bacilli of interest to agriculturists were exhibited under the microscope. The more important were those relative to diphtheria, tuberculosis, glanders, and typhoid fever. The object of the institute is two-fold: To investigate and, by inoculation, stamp out such disease in cattle, etc., and also to provide means for the rising generation to give special attention and study to these matters in relation to stock breeding and other subjects. The exhibit was of such a novel and important character that we shall probably have more to say regarding it in a future issue.

We now come in turn to the collection of agricultural MACHINERY.

This is of necessity much the same as in previous years, but nevertheless there are several points worth mentioning. Gas engines and oil engines are as plentiful as daisies, and have already been dealt with in detail in these columns. We can now speak of them as seen at work. They all appear to work well and steadily, and among those that call for specially favourable comment are the makes of MESSRS. HOWARD AND CO., of Bedford, and MESSRS. HORNSBY AND ACKROYD, who have a portable oil engine which is very silent in operation. In

close proximity are the stands of the CAMPBELL OIL ENGINE, CROSSLEY'S, and TANGY'S, who have a pretentious but tastefully arranged exhibit. In addition to these, there were the TRUSTY OIL ENGINE CO. (Cheltenham), NATIONAL OIL AND GAS ENGINE CO. (Ashton-under-Lyne), and the "Rocket" oil engine of MESSRS. R. STEVENSON AND CO. (Newcastle). This latter appears to be a very simple engine, and we trust we shall be in a position to speak more fully of it subsequently.

THE CRANSTONE ENGINEERING WORKS, of Hemel Hempstead, have a small exhibit of paint mills and mixers, thus supporting the exhibit of MESSRS. PILCHER, LTD. (London), who have a neat display of paints in all shades ready mixed in oil or dry.

THE BLACKMAN AIR PROPELLER CO. (London) have a good exhibit of their ventilators, and also an ingenious application of the same to a heating furnace for the supply of hot-air at a constant temperature of about 190°F.

R. H. MARSDEN (Leeds) has a full and representative collection of his stone breakers and also a combined elevator and crusher.

Disintegrators were very plentiful. Taking them in the order of my visits, we come first to the CENTRAL CYCLONE CO. (London), who, in addition to their usual types, have a new pulveriser made in a small size, which only weighs 8½ cwt., their smallest size hitherto having been 23 cwt. It will thus be seen that this new type is very handy and specially suitable for grinding coal, oilcakes, and chemicals in comparatively small quantities.

THE PATENT HARDY PICK CO., LTD. (Sheffield), show their "Devil" and "Multiple" disintegrators, and were also attracting a good deal of attention with their new Vibromoter, which was at work, showing at once its simplicity and efficiency.

MESSRS. CHRISTY AND NORRIS (Chelmsford) had a well-arranged exhibit showing the products obtained by their disintegrators, and also a case containing specimens of over 150 different substances that have been successfully treated by them. Several improvements have been made in the disintegrator. The grooved side-plates have been supplanted by corrugated sides, which throw the substance being ground back into the path of the beaters. The beater arms are speedily and easily fixed. The machines are carefully balanced and fitted with automatic lubricators on the small as well as the large machines. A special feature is their new pneumatic disintegrator, which yields a very fine product. Space will not permit us to refer now to the details of this arrangement, but it certainly warrants more careful reference in a future issue.

MESSRS. TURNER AND CO. (Ipswich) have among a large collection of grinding and milling machinery a scraper and sifter, which is a neat and compact application of the Vibromoter principle to this class of work. In close proximity is the exhibit of the THOMPSON UNIVERSAL CONVEYOR. The principle on which it works is entirely different to that usually employed in conveyors, and is extremely simple. Practically speaking a rocking trough with a bottom of the same type as a mining buddle is the essential feature of the apparatus.

Mr. J. H. CARTER (Dunstable) is well in evidence with his disintegrator, which has now been so long before the public that it is not necessary to refer to it in detail. Milling machinery plays an important part in the exhibit. There is one point in connection with the disintegrator that should be noticed. This is a neat, lubricating device by which the shaft is practically kept in a bath of oil. A new purifier for Semolina Middlings, &c., is also exhibited, this apparatus having just been brought out by Mr. Carter, under the patents of Messrs. Spokes and Freeman.

STRAWSON'S, LTD. (London) make a good show with their "Strawsonite" for potato spraying, and the "Antipest" and "Nobus" spraying machines, both of these being knapsack forms. They also show larger forms of distributors.

FOLLOWS AND BATE, LTD. (Manchester), have an extensive display of grindstones and chaffcutters, but they were also pushing with success their "Economic" paint mill, as the same mill can be used to grind the dry pigments and also as a mixer. Old and dry paint and skins can be re-ground and used as primings as by a simple adjustment the conversion of the grinder into the mixer can be accomplished, the upper cone of the mill becoming oil or turpentine tight. Another interesting exhibit was a neat hand crushing mill for grinding bones, oyster shells, &c., being thus specially adapted to the requirements of poultry feeders. Among minor exhibits their "Anglo-American" and "Ideal" meat mincers should be mentioned, as they are so made that the meat is first sliced before being minced. It is impossible for any meat to reach the mincing section until it has been cut up into minute slices.

E. S. HINDLEY (Dorset) showed his well-known combined engines and dynamos, and also a collection of separate engines suitable as sources of motive power in farmyards. A double-acting pump and several smaller types formed part of the exhibit. A hand and circular saw, with special facilities in connection with the table or bench, were shown at work, the former being made to cut many fanciful and intricate shapes.



exhibits should be mentioned before concluding. These NON HOLLOWARE Co. (Bilston), who have, however, display to grindstones, and the VICTORIA PATENT STONE, who made a very presentable if not picturesque show of paving stones, sets, cobbles, drains, and such were showing several ornamental flower vases for garden

the weather has been fine, Tuesday having been a with an attendance of over 17,000.

### THE MINERAL OIL INQUIRY.

Continued sitting of this inquiry evidence was given on behalf of lamp manufacturers' trade in opposition to recommendations made to the Committee that there should be legislative restriction on the manufacture of oil lamps of alleged dangerous construction. F. Allen, managing director of Dietz, Davis, and Co., lamp makers, London, traversed statements advanced in the London County Council as to the large and increasing number of deaths arising from lamp explosions, and said the number of deaths either in proportion to the lamps in use or the deaths from other causes. He had never known an accident caused by a lamp of the construction. Even in the cheapest lamps the burner is carefully constructed, although of weaker material, as in the case of kerosene lamps. When an accident happened it might be because of the improper size for the tube, or because the lamp was not fitted to the proposed legislative restrictions, if lamps with glass reservoirs were prohibited it would utterly destroy the export trade, of which 92 per cent. consisted of lamps with glass reservoirs. It would not affect the object sought, seeing that there are millions of glass lamps in use at the present time. There is great difficulty in carrying out inspections to see whether lamps conform to the regulations laid down. Mr. J. W. Bernard, managing director of Wright and Butler, lamp manufacturers, gave evidence on behalf of the Birmingham lamp manufacturers; said that experience and inquiry had led him to the conclusion that almost all lamp accidents were due to gross carelessness. Any lamp reasonably well constructed and in current use in the country was, in his opinion, safe if used, though it was impossible to construct a lamp which would be safe in all circumstances. At the present time the trade were very fully worded statements as to how lamps should be used. These statements would be distributed over the country. He did the use of strong glass reservoirs and the raising of the flash-point from 73° to Fahr. 100°. The present flash-point was, in fact, too low for the cheap class of lamp which was mainly used in small rooms and kitchens, with often a roaring fire for ventilation, and where the temperature was frequently 80°. Oil of a flash-point of 100° would burn properly in all the lamps now in the market and would cost a gallon more than low flash oil. Mr. R. B. Evered, managing director of Evered and Company, lamp manufacturers, Mr. Shaw (president Walsall Chamber of Commerce), manufacturer, also gave evidence.

Evidence on Tuesday, Sir H. Roscoe said:—In attempting to reduce the number of accidents with lamps, there were two things to deal with—one the construction of the lamps and the composition of the oils. If everybody could employ a lamp, that was to say a lamp the use of which was free from the risk of explosion in the fount of the lamp or of fire, it would be the necessity of legislation as to the quality of the oil, so far as lamp accidents were concerned, become unnecessary, of course, for the storage and carriage of oil legislation would be required. There was a large amount of oil which was of a very volatile character, called naphtha, which whether it was used in a lamp or not would require some sort of legislative restriction. In his opinion, however, there was no such thing known as a safe lamp which could be really designated as a safety-lamp; he wished to say that in his opinion, if such a lamp did not exist, it would be possible for the legislature to insist upon its sole use. He had come to the conclusion that it was rather to the properties of the oil that they must look for an amelioration of the condition of things. He was of opinion that the danger which was in common use in this country, with ordinary care, was not dangerous. The danger was in the oils of the more volatile constituents which were the common name of naphtha or spirits; and if this was a statement of the existing condition of things it was that the higher the flash-point was—that was to say, the less the quantity of naphtha contained in the oil—the less dangerous it was. There were two dangers—the danger of an explosion of the lamp and that of fire from the oil being spilled and order to minimise the danger from explosion as well as

from fire it was advisable that the maximum temperature of the oil in the fount of a lamp which was burning should not exceed the flash-point of that oil, because in these circumstances the risk of explosion was prevented and the risk of fire was diminished. For his own information, and in order to put evidence before this Committee, he had made a series of experiments to ascertain how far the temperature of the oil in the fount in burning ordinary lamps such as were used in this country rose above the flash-point of the oil. The lamps he used were the Miller and the Duplex, and the oils the White Rose and the Tea Rose, bought in London, and the Royal Daylight, bought in Manchester. The results of the experiments showed that the maximum temperature of the oil in the fount after four hours' burning in the case of low flashing-point oils always exceeded the temperature of the flash-point (76° Fahrenheit and 83° Fahrenheit); whilst in the case of the high flashing-point oils (102° to 103°) the temperature of the oil in the fount never reached the flash-point of the oil. From these experiments he concluded that the present statutory flash-point of 73° was too low, and that it should be raised to 100° or 105°. In another experiment he found that as regards illuminating power the removal of the naphtha alone or along with a portion of what was known in commerce as the heavy end did not practically affect the illuminating power, and that the best result was obtained when 6% naphtha and 2.7% of the heavy end was removed. His experiments had been confined to American oils; but, of course, any restriction he proposed would apply equally to Russian and Scotch oils. If asked to summarise his views, he would say that the present flash-point of 73° was too low; that it was not possible to fix a flash-point so high that all danger from fire could be avoided; that if the flash-point were raised to 100°, or, better, to 105°, a considerable diminution in accidents from explosions and from fire might be confidently looked for, and that this alteration in flash-point would not materially diminish the quantity of oil imported into the country nor materially alter its price.

After Sir H. Roscoe, the Committee examined Sir D. Salomons, vice-president of the Institution of Electrical Engineers, who gave evidence as to the use of petroleum in auto-motor cars.

**GOLD PRODUCTION IN THE RAND.**—The output from the Rand district during the last month, as cabled by the Witwatersrand Chamber of Mines, amounts to 160,635 oz. This total, however, is exclusive of the returns of several companies which, under the title of the "Association of Mines of the South African Republic," give their joint output as 34,372 oz. As the Wemmer result is included in both returns, it has been deducted from the Association figures, which are thus reduced to 29,224 oz. The month's production is, therefore, 189,859 oz., and shows an increase of 18,751 oz. as compared with the previous total, and a decrease of 4,721 oz. as compared with the corresponding month of 1895.

**FAILURE OF A DRYSALTER.**—At the Manchester Bankruptcy Court, recently, before Mr. Registrar Atkinson, Mr. Frederick Victor Arden, oil merchant and drysalter, of Bull's Head Exchange Chambers, Corporation-street, was examined by the Assistant Official Receiver (Mr. A. B. Potter) as to the circumstances of his failure. The liabilities of the debtor were said to be £515, while the assets were practically nil. The debtor began business on his own account in October, 1893, at Briddon-street Oilworks, Strangeways. He was then owing £100 for private debts. These debts he paid off with some borrowed money, but he had been practically insolvent all along. The debtor was ordered to prepare further accounts, and the examination was adjourned to July 6. Mr. Rowlands appeared on the debtor's behalf.

**LANCASHIRE COAL INDUSTRY.**—Mr. Henry Hall's report on the mines under the Coal Mines Regulation Act, 1887, in the West Lancashire and North Wales inspection district was issued a week or so ago. The number of persons employed is 57,448, of whom 46,587 are males employed below ground, and 1,925 are females employed above ground. The total production of minerals is 917,300 tons less than in 1894. Lancashire (West) produced 11,993,863 tons of coal, 6,134 tons of fireclay, and 188 tons of pyrites. Denbighshire, 2,206,993 tons of coal, 46,835 tons of fireclay, and 69 tons of ironstone. Flintshire, 641,079 tons of coal, 9,568 tons of fireclay, and 917 tons of oil shale. The production of the North Wales counties shows a loss of 314,605 tons, as compared with the previous year, a proportion similar to the loss in Lancashire. The tonnage raised per person employed is less this year than last, which points to more irregular employment in 1895 than in 1894. The tonnage per person employed in 1894 was 272 tons, whereas in 1895 it is only 259 tons. The average value at the mine of the production of 1895 may be taken at about 6s. 3d. per ton, or 3d. less than in 1894. In the West Lancashire district there were 57 "separate fatal" accidents, in which 59 lives were lost, and in the North Wales district 19 separate fatal accidents resulted in the loss of 20 lives. The number of the separate non-fatal accidents in the whole district was 227, the injured numbering 241.



## Legal Intelligence.

### SUPREME COURT OF JUDICATURE.

#### COURT OF APPEAL.

(Before Lords Justices Lindley, Lopes, and Rigby.)

LANCASHIRE EXPLOSIVES CO., LTD., v. ROBURITE EXPLOSIVES CO., LTD.

The plaintiffs, who are the owners of Lumm's patent for an explosive known as Bellite, brought an action to restrain its infringement by the defendant company, who were manufacturing an explosive which the plaintiffs represented was composed of the same substance as theirs, and prepared according to the directions contained in Lumm's specification. Mr. Justice Kekewich decided at the trial that there was insufficient invention in the plaintiffs' explosive to entitle it to protection; but on appeal the Lords Justices held that the patent was good and valid. Then the defendants altered their process; but the plaintiffs, contending that it still infringed the substance of their patent, moved for an order for the committal of the directors of the defendant company for the purpose of obtaining, without bringing a new action, a judgment upon that question. On May 21st Mr. Justice Kekewich refused to commit, and this appeal was from that decision. The appellants' case was that with the exception of a small addition, which might or might not be material, the defendants were using the same ingredients as before—namely, nitrate of ammonia, and a bi- or tri-nitrate of carburetted hydrogen; but they now avoided treating the mixture to such a temperature as to enclose the nitrate of ammonia in hydro-carbon, and thus rendering it waterproof, the change making it necessary to put their explosive into waterproof cases in order to prevent it from absorbing moisture from the atmosphere. Mr. Moulton, Q.C., Mr. Terrell, Q.C., and Mr. Rubie appeared for the plaintiff company, and Mr. Cripps, Q.C., Mr. R. Wallace, Q.C., and Mr. A. B. Shaw for the Roburite Company. Their Lordships dismissed the appeal with costs, the conclusion at which they arrived being that it was an essential part of the plaintiffs' patent that the two substances should be heated to a temperature which would produce fusion, and that what the defendants were doing was not even a colourable imitation of the process described in the specification.

### SOCIETY OF CHEMICAL INDUSTRY.

#### NOTTINGHAM SECTION.

THE last meeting of the present session was held on Wednesday last week, at University College, Nottingham. A paper by Dr. Clowes on "Acetylene," illustrated by numerous experiments, was the attraction. Dr. Clowes explained how the materials necessary for the manufacture of carbide of calcium, whose action in water produces this unrivalled gas, are extremely cheap—lime and small coal or charcoal. The electric power requisite to bring about the combination is the only costly item. It is now proposed that electric light works should during the daytime utilise their plant in the manufacture of carbide of calcium, and no doubt when this is accomplished a great step will have been taken towards the general introduction of acetylene for illuminating purposes. How great its illuminating power is may be judged from the fact that a light burning five cubic feet of acetylene per hour has a power of 240 candles, whereas ethylene, one of the chief constituents of coal gas, burning at the same rate, only gives 70 candles, and methane, another constituent, reaches only the insignificant figure of 5.2 candles. The limits of explosibility when mixed with air are very wide apart, reaching from 3 to 82 per cent., thus considerably exceeding those of hydrogen of which a mixture with air must contain between 5 and 60 per cent. of this last-named gas to be explosive. The Chairman (Mr. Carulla) asked whether Dr. Clowes had had any experience with carbide containing calcium phosphide, said to be a common impurity in continental makes, which had been proved to be most dangerous, giving rise to explosions? Mr. Wood thought that with Niagara as a source of electric power there seemed to be little chance for competition in the manufacture of carbide by electric lighting companies. After some remarks by Mr. Caven and Mr. Forth, Dr. Clowes briefly replied, saying that the carbide he had recently used was certainly free from any trace of phosphide. He was hardly prepared to concur in the opinion that acetylene was perfectly safe to use with brass fittings when purified. Thanks were accorded to Dr. Clowes by acclamation for his most interesting and opportune paper. Mr. J. M. C. Paton then read a note "On the amount of air usually met with in water from ordinary sources." The proceedings terminated after an expression of hope from the chair that there might be a good muster of local members at the forthcoming annual meeting of the society in London next month.

### FATAL FIRE AT AN OIL SHOP.

A DISASTROUS fire, in which three children were suffocated, broke out early on Wednesday morning last week at an oil shop in Hackney. The premises, owned by Messrs. Davies and Evans, were occupied by a manager named Vaughan, his wife, and children. Three of the latter, aged four, nine, and thirteen, slept in the back room on the second floor, and so rapidly did the flames spread that it was impossible to reach them in time. By placing a ladder against the front room a man, who was outside when the outbreak occurred, succeeded in rescuing the wife and youngest child, while the eldest, a boy of 17, who slept in an upper story, jumped from a window. In so doing, however, he sustained such severe injuries that he died soon after at the German Hospital, Dalston. With the aid of the fire brigade the flames did not spread to the adjoining shops, the interior of the premises was completely gutted. So inflammable was the material stored on the ground floor that hardly a minute passed before the whole building was in flames. The fire broke out from some unknown cause under the staircase, where some tanks of kerosene were stored, and then it spread to the stairway, which was entirely destroyed, the flames breaking through the roof. The shop and five of six rooms were severely damaged. The building and the contents of the shop were insured.

At the inquest on Monday, some striking evidence was given which was significantly illustrative of the real dangers as revealed by science and how they are disposed of by interested parties. In answer to a question by Mr. Spencer (officer of the L.C.C.) Vaughan said that he left the oil shop at 12.15 a.m. He then walked to the canal bridge at the end of Mare-street, and he spoke to a neighbour. He fixed the time of seeing this neighbour at about 2 a.m., but he could not account for the time between 12.15 and that hour. He opened the street door by his latch-key. The witness went on to explain that the oils sold in the shop were kept in the back yard, and were conveyed to the shop by means of pipes. Pails were hung to the taps, and these pails contained several quarts of petroleum. The stock of oil was American Russian petroleum.

Mr. Spencer explained that the system of keeping pails on taps was dangerous. The shop in this instance was heated by gas, unventilated, and it was probable that the oil left in the pails had given off inflammable vapours, and thus caused the fire. The atmospheric conditions were favourable to such an occurrence.

In reply to the Coroner, Mr. Spencer said that the County Council had no control over oil shops except with regard to petroleum sold. The experience of the County Council was that in oil shop fires the only thing that was licensed entirely escaped the fire. It was so in this instance. The spirit was kept in a brick cell in the yard. The Council thought the time had arrived when they should be given greater control over oil shops. Experts had proved that when petroleum itself was heated to 73° Fahr. (which is the present legalised standard of safety, *Ed. C.T.J.*), it gave off an inflammable vapour, and if this vapour came in contact with a naked light an explosion was bound to follow.

Mr. Poley said that Mr. Spencer's conclusions were entirely disputed by Messrs. Davies and Evans. As that firm had 55 shops in London, legislative interference would affect them considerably, and he had asked that Mr. Spencer's theory should not be taken as fact.

Mr. Spencer replied that his statement could be proved by scientific evidence.

Colonel Rudd, inspector under the Petroleum Acts, said that Mare-street, was a typical London oil shop—a shop and warehouse and oil stores on the ground floor and dwelling-rooms above. Various visits witness has made to the shop he had found oil in pails under the taps.

By Mr. Poley: He had never known a fire to break out from vapour arising from oil on the premises.

Mr. Spencer: In your experience are oil shop fires usually shrouded in mystery? Witness: Yes.

The jury considered their verdict in private. When the case was reassembled it was announced they had found that the deaths were due to suffocation and burning, and that such deaths had resulted from an accidental cause. They added that there was no evidence to show how the fire originated, and they commended the fire brigade officers for their prompt appearance at the fire, and the witness Warren for the courageous manner in which he had rescued Mrs. Vaughan and one child. They also expressed sympathy with Mr. and Mrs. Vaughan in their affliction, and they added a rider, "Further powers are necessary to enable the County Council officials to regulate the storage and distribution of petroleum oils in oil shops in London."

The present Committee of Inquiry on Petroleum should note, and especially the astonishing request that Mr. Spencer's statement "should not be taken as fact," when it is proved up to the hilt by scientific evidence and daily experience. The boot should be on the other foot, we think. If Messrs. D. and E. are so ignorant, their opinions must be treated as those of ignoramus, to say nothing of



taint given to their evidence by such a reprehensible attempt to take advantage of the ignorance of the jury. Fortunately, Mr. Spencer stultified the attempt.

## THE COST OF CALCIUM CARBIDE.

SUPPLEMENTARY REPORT OF HOUSTON AND KENNELLY.

(Concluded from p. 403.)

IN the accompanying report we have stated, in conjunction with Prof Kinnicutt, the cost of producing calcium carbide electrically at the Spray works on the basis of our observations there.

As, however, the Spray works are partly experimental in their character, and freight charges on material there are heavy, we have thought it best to append a separate estimate of the cost of manufacturing calcium carbide on a more extended scale, and at a locality where the materials employed would be less expensive.

We will assume for this plant an output of 5 tons (10,000 pounds) of gross carbide of calcium per diem, and an operation of 300 days in the year by water-power.

We will assume water-power at \$5.00 per H. P. annum at the turbine shaft, including ground rent. We understand that contracts have already been entered into for limited quantities of power on this basis.

### INVESTMENT.

|                                            |          |
|--------------------------------------------|----------|
| 1,200 H. P. turbine and installation ..... | \$11,200 |
| Building .....                             | 2,500    |
| Dynamo-electric machinery .....            | 24,000   |
| Machinery for crushing and mixing .....    | 4,000    |
| Furnaces and electrodes .....              | 2,500    |
| Equipment, tools, chemicals, &c. ....      | 500      |
|                                            | <hr/>    |
|                                            | \$44,700 |

### LABOUR.

|                                                |                     |
|------------------------------------------------|---------------------|
| Three shifts of eight hours each.              |                     |
| One superintendent .....                       | \$2,000             |
| Two foremen .....                              | 1,500               |
| Three grinders .....                           | 900                 |
| Three dynamo men .....                         | 1,350               |
| Three furnace men .....                        | 900                 |
| Three labourers .....                          | 900                 |
|                                                | <hr/>               |
| 15.                                            | \$7,550             |
| Insurance .....                                | 125                 |
| Taxes .....                                    | 230                 |
| Interest, 5% on investment .....               | 2,235               |
| Depreciation, 5% on investment .....           | 2,235               |
| Oil, waste, stationery, and petty stores ..... | 750                 |
|                                                | <hr/>               |
|                                                | \$13,125 per annum. |

Water-power and rent, 1,200 H. P. .... 6,000

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\$19,125 per annum.

### MATERIALS.

|                                               |       |            |
|-----------------------------------------------|-------|------------|
| Coke delivered at \$2.75* per ton 1687 5 tons | 4,641 | per annum. |
| Lime delivered at \$2.50* per ton 2002 5 tons | 5,006 | " "        |
| Carbon for electrodes at 6 cents per pound.   | 1,290 |            |

Output 1,500 tons of gross carbide .... \$30,062 per annum.

Cost of manufacturing one ton of 2,000-pounds gross carbide ..... \$20.040

The cost of producing calcium carbide electrically is evidently limited by the cost of lime, coke, and electric power, no matter what the scale upon which the process is conducted.

If we assume a perfect electric furnace in which neither material nor energy is wasted, that is, a furnace which ensures the complete union of calcium and carbon without loss, and with no escape of heat in the process, we know that one ton of carbide would require for its production 0.875 ton of pure lime, and 0.562 ton of pure coke.

It has also been calculated from thermo-chemical data that 1½ electrical horse-power hours will be almost precisely the right amount of energy to produce one pound of carbide, or 3,000 H. P. hours per short ton of carbide.

Consequently if L is the cost of lime in dollars per ton, C the cost of coke in dollars per ton, and P the cost of an electric horse-power hour in dollars, a theoretically perfect plant would yield carbide at a cost per ton, exclusive of labour and fixed charges, of

$$0.875 L + 0.5625 C + 3000 P.$$

For example, if lime (assumed pure) costs \$2.50 per short ton, coke

\* These prices will vary at different localities. They are here given for very favourable conditions.

(assumed pure) costs \$2.75 per short ton, and an electrical horse-power of 300 working days of 24 hours each, cost \$12 at furnace terminals (0.1667 cent. per working H. P. hour), the limiting cost of carbide in a perfect furnace would be

$0.875 \times 2.5 + 0.5625 \times 2.75 + 3000 \times 0.001667 = \$8.734$  per short ton. On the other hand, in the two runs witnessed by us at Spray, the short ton of gross carbide required 1.125 tons of coke, 1.335 tons of lime, and 5122 H. P. hours. The limiting cost of gross carbide per short ton, if produced under the conditions witnessed at Spray would therefore be

$$1.335 L + 1.125 C + 5122 P.$$

With lime (assumed pure) at \$2.50 per short ton, coke (assumed pure) at \$2.75 per short ton, an electric horse-power at furnace \$12.00 per annum (0.1667 cent per H. P. hour), we have for the cost of material and power,

$$1.3335 \times 2.50 + 1.125 \times 2.75 + 5122 \times 0.001667 = \$14.960.$$

In addition the cost of electrode carbon is about 90 cents per ton of carbide produced, bringing the cost of material and power at these figures and at the Spray development to \$15.87 per ton.

We may therefore summarize as follows:—

Calcium carbide by the electric furnace cannot be manufactured cheaper than 0.875 L + 0.5625 C + 3000 P dollars per short gross ton for material and power, irrespective of electrode carbons, labour, depreciation, interest, and other fixed charges. At reasonable minimum values for L, C, and P, this amounts approximately to \$8.73 per short ton.

Owing to impurity of materials and departure from theoretical perfection in the electrical furnaces we found at Spray, the actual cost of material and power, irrespective of electrode carbons, labour, depreciation, interest, and other fixed charges, is

$$1.335 L + 1.125 C + 5122 P,$$

which with the same reasonable minimum values for L, C, and P, gives \$14.97 per short gross ton.

Under favourable conditions, such as we believe can be realised in particular localities, the total cost per short gross ton in a plant whose output is five tons daily might be \$20.

Under the actual conditions existing at Spray during our tests, we find the total cost to be \$32.767 per short gross ton, if the plant were worked continuously.

## Trade Notes.

**THE BRITISH MOTOR CO.**—The British Motor Company is about to announce a further interim dividend of 30 per cent., in addition to the 10 per cent. that was paid a few weeks ago. This should have an effect upon the price of the shares now quoted at £3.

**NIGHT USE OF TRAMWAYS FOR GOODS TRAFFIC.**—The Chemical Sectional Committee of the Manchester Chamber of Commerce has had under discussion the outlines of a scheme by which the tramway system of Manchester and Salford might be utilised for industrial purposes—viz., by using them in the night time for the passage of light trains. The Committee asked that information might be obtained as to the powers of the Corporation and the Carriage Company respectively, and the attitude which these authorities would adopt towards such a scheme. The Board approved this proceeding.

**SALT SHIPMENTS IN MAY.**—There has been a considerable falling off in the exports during May, though in a couple of instances increases are noticed. There was a slight increase in the export of salt to British North America, the figures being 14,704 tons, compared with 12,189 tons in May of last year. The figures for the previous four months also show a slight increase. To Central and South America 2,290 tons were sent last month, compared with 866 tons in May, 1895, and during the previous four months 5,374 tons, against 4,759 tons in the corresponding period of 1895. In nearly every other return decreases are noted, most of them large, and amounting in the aggregate to nearly 30,000 tons during May. The returns for the previous four months do not come out so favourable. During May large decreases are recorded in the shipments to the United States, West Indies, Africa, Asia, European ports (exclusive of U.K.), and to other ports in the United Kingdom. The same may be said of the imports during the past four months of the year to the United States, Asia, and Australasia, while during that period there was an increased export to the West Indies, European ports, and to U.K. ports, the other countries showing only a slight falling off. The total exports during May were 70,839 tons compared with 95,769 tons in May, 1895, and during the first four months of this year 152,345 tons compared with 163,298 tons in the corresponding period of 1895. The shipments from Liverpool were: May, 1896, 53,216; May, 1895, 63,233 tons; first four months 1896, 120,452; same period 1895, 139,818; and from Runcorn and Weston—May, 1896, 17,623 tons; May, 1895, 32,536; first four months 1896, 31,893 tons; same period 1895, 23,486 tons.



**AN INSTITUTE OF PHYSICAL CHEMISTRY.**—On the 3rd of this month, the newly-erected institute of physical and electro-chemistry, at Göttingen, was formally opened in the presence of a large number of influential people. The director of the institute is to be Professor Nernst, the author of the text-book of physical chemistry which we reviewed in our issue of May 11th, 1895.

**CHICAGO EXHIBITION MEDALS.**—The medals and diplomas awarded to British Exhibitors at Chicago have at length been issued to H. B. M. Ambassador at Washington, and have been transmitted by him to the Foreign Office. Sir Henry Trueman Wood has been requested by the Secretary of State to undertake the duty of distributing them, and this will be done at once. All the exhibitors may expect to receive their medals within about a month from the present date. The task was undoubtedly a heavy one but the time taken in accomplishing it does not harmonise with the Americans' reputation for "go." The majority may certainly be excused if they ask "when was the Chicago Exhibition?"

**PEGAMOID: A NEW INDUSTRY.**—In its raw state pegamoid is a jelly, or rather pulp. By imposing it on cotton cloth or impregnating that material with it pegamoid can be turned to many and varied purposes—i.e., the imitation of morocco, snake, crocodile, and calf skins, window blinds, waterproof belting for engines, in place of leather for cycle fittings, boots and shoes, and book-binding, and a hundred and one other things. The most delicately coloured wall papers treated with it become washable, or if you prefer to hang your rooms with chintz or tapestry, you can sponge the cotton, woollen, or silken material down as you would do a room lined with tiles; the effect is the same, for pegamoid is waterproof. To the world in general pegamoid is a new name, but to the business community it has been known for some little time, and its qualities have been put to the test. Messrs. Eley Brothers use it for their cartridges, and have up to this date made no less than 12,000,000 cases from it. Messrs. David Moseley and Sons are applying it to cloth, it is reported, with satisfactory results, and Messrs. Rylands and Son and Messrs. W. H. Smith and Sons have entered into contracts for its use. In face of pegamoid, the old saying that there is "nothing like leather" threatens to fall into abeyance, for it promises largely to take its place both with the maker of boots and shoes, the upholsterer, and with the bookbinder and maker of fancy leather articles as well.

**THE DEE POLLUTION BILL.**—The Bill of the Chester Corporation for enlarging the existing powers for the prevention of the pollution of the river Dee, for the construction of a weir or tidal dam across the river, and for other purposes, and for empowering the borrowing of £102,000. required for the necessary works, came before the Select Committee of the House of Commons on police and sanitary regulations last week. Among the numerous opponents are the local authorities concerned whose areas drain into the Dee, the Dee Fishing Board, and the riparian owners, headed by the Duke of Westminster. Mr. Balfour Browne, Q.C., in opening the case for the bill, said its main provisions were founded upon the report of a special commission who held an inquiry and reported in 1894, and suggested remedies to obviate the pollution of the river both from above and below, which remedies, if adopted, would render the waters of the Dee as pure for drinking purposes as those of any river in the kingdom. The Police and Sanitary Committee had already passed legislation for the Mersey and Irwell, the operation of which would render the waters of the Ship Canal much purer than would otherwise have been the case. Similar powers had been given in the case of the West Riding of Yorkshire and of the Thames Conservancy. The promoters had used every means in their power to induce the sanitary authorities on the banks of the river to stop pollution but without avail. In the construction of the proposed dam or weir a fish pass of an entirely new character would be introduced, and with this and purification of the water the number of salmon in the Dee would be enormously increased.

## Market Reports.

### TAR AND AMMONIA PRODUCTS.

Tar products generally are firmer. Benzol (90's) stands at 2s. 9d. prompt, and 50/90's 2s. 4½d. Carbolic acid: crude (60%) is now 2s. 3d., and 40% crystals 7d. Crude naphtha is steady at 10d., and solvent 1s. 4d. Anthracene and creosote unaltered. Pitch firm at 32s. to 32s. 6d., f.o.b., East Coast.

Sulphate of ammonia is firmer. The market has been steady during the week, and there have been buyers for the small quantities that have been offered. There is still no quotation for Beckton, but London outside makes figure at £8. 2s. 6d., Liverpool £8. 2s. 6d., Hull £8., and Leith £8., all prompt.

### MISCELLANEOUS CHEMICAL MARKET.

Business generally during the past week has been satisfactory. Bleaching powder is rather easier in price, though the demand continues good. Caustic soda does not move as readily as sellers would like: prices are about the same, and we quote 70% £7. 7s. 6d., and 60% £6. 7s. 6d., f.o.r., makers' works. Saltcake in fair request at about 21s. 6d. per ton, rails. Chlorates of soda and potash quiet at former prices. Recovered sulphur strong and rather scarce—£3. 17s. 6d. to £4., rails, is now quoted. Acetates generally are dull—brown (lime) is still obtainable at £4. 2s. 6d., c.i.f.; grey is a little firmer at £8. Acetic acids continue offering at low rates—40% £9., 25% £6. Sugar of lead: English white £25. 10s., grey £18. 10s. White powdered arsenic still in short supply, and £22. 10s. to £23. per ton at Garston, etc., can be realized. Carbolic acids are well maintained in price, and the demand is fairly satisfactory—crude, 60%, is quoted at 2s. 3d. per gallon, and crystals, 39/40%, at 7d. per lb. Sulphocyanides sell slowly at—barium 5d., and ammonium 7d. Oxalic acid steady at 3½d. per lb. Tin crystals easier—to-day's price, 5d. and 5¼d. per lb. Sulphate of copper £18. 10s. per ton. Nitrate of soda remains unchanged, but the market is quiet—£7. 15s. to £8., according to quality is to-day's value.

### REPORT ON MANURE MATERIAL.

Business has been quiet throughout the week, and transactions have only been induced by low prices. Mineral phosphates are difficult to place. United Kingdom buyers are fairly well covered for high grade stuff, and the Continent, having some time since purchased rather freely, are now disposed to wait in regard to further supplies. Algerian phosphate, kiln dried, offers 5¼d. per unit, in cargoes c.i.f., to United Kingdom, but buyers do not respond at the price. For South Carolina river rock 5d. is now freely quoted. There is nothing fresh to report in River Plate bones, the quotation, £3. 17s. 6d., for autumn shipment being too high to suit buyers. Sellers of Bombay bone meal are firm in all positions, and it is doubtful whether under £3. 15s. would now be accepted. For shipment late in the year £3. 17s. 6d. to £4. is asked. The quotation for crushed Kurrachee bones is £4., but there is nothing doing at the price. Nitrate of soda is quiet, at 7s. 7½d. per cwt ordinary quality, and at 7s. 9d. per cwt. for refined.

### THE METAL MARKETS.

**LONDON, WEDNESDAY.**—Pig iron, firm: Scotch warrants closed at 46s. 1½d.; Middlesbrough, 37s. 2d. cash, and hematite, 47s. 0½d. Copper, steady: Chili bars, G.O.B.'s and G.M.B.'s, closed at £49. 16s. 3d. to £50. 1s. 3d. cash, and £49. 17s. 6d. to £50. 2s. 6d. three months. Tin, quiet: Straits closed at £61. 5s. to £61. 15s. cash, and £61. 15s. to £62. 5s. three months; Australian, £62. 10s. English ingots, £65. Lead, steady: Spanish, £11; English, £11. 2s. 6d.; Silesian spelter, ordinary, £18. 7s. 6d. Nickel, 1s. 2½d. Antimony, £30. to £30. 10s. Quicksilver: First hands, £6 10s; second hands, £6. 9s. Copper shares, steady: Cape, 2½ to 2½; Copiapo, 2½ to 2½; Libiola, 2½ to 3½; Mason and Barry, 3½ to 3½; Rio Tinto, 24½ to 24½; Tharsis, 5½ to 6½.

**GLASGOW, WEDNESDAY.**—Market steady, with good business. Scotch done at 46s. 2½d. and 46s. 2d. cash, also at 46s. 3½d. and 46s. 3d. one month; closing with buyers at 46s. 1½d. cash, sellers ask 46s. 2d. Cleveland done at 37s. 2½d. cash, also at 37s. 4½d. one month; closing with buyers at 37s. 2d. cash; sellers ask 37s. 3d. Cumberland hematite done at 47s. 1½d. cash, also at 47s. 4d., 47s. 3d., and 47s. 3½d. one month; closing with buyers at 47s. 0½d. cash, sellers ask 47s. 1½d. Middlesbrough hematite done at 44s. 9d., 44s. 8½d., and 44s. 9d. one month; closing with buyers at 44s. 6½d. cash, sellers ask 44s. 7½d.

### HULL PAINT, OIL, AND COLOUR REPORT.

TUESDAY.

**OILS.**—The situation here, in anticipation of the closing time of the half-year being so near, is very quiet, which makes a bad market worse; one feature in all quotations beyond June is the higher prices ruling, which leads us to believe that the end of June sees the bottom of the present decline in prices. The import of linseed during the week has been 43,788 quarters, viz., from the River Plate, 28,206 quarters; Bombay, 12,381 quarters; New York, 2,000 quarters; and St. Petersburg, 1,201 quarters. Linseed oil is steady, at 16s. 9d. per cwt. naked spot; July-August, 17s. 3d.; September-December, 17s. 4½d. to 17s. 6d.; and January-April, 17s. 7½d.; refined and boiled from £1. to £2. per ton extra. Export for the week has been 1,220 cwt.



port of cottonseed during the week has been nil. Refined cotton oil, at 14s. 1½d. naked spot; July-August, 14s. 4½d.; September-April, 14s. 10½d.; crude on the spot is quoted at 14s. 1d. and ordinary barrels 30s. per ton extra. Export of oil for the week has been 5,780 cwt. Castor oil first pressure pressed for, and firm at 2½d. per lb. American Turpentine, per cwt. Cod oil, £17. to £19. per ton. Resin continues high in value. Brown wool grease, £8. per ton. Olive oil £14. per ton. Boiled siccative oil, £12. per ton. Cotton oil soap, 70% fatty acids, £10. 5s. per ton. Locomotive oil, 10s. per ton.

LS.—The trade is very quiet. Linseed cakes quoted from £5. 10s. per ton. Cottonseed, £3. 12s. 6d. to £3. 15s.

Black Sea rape cakes, for manure purposes, £2. 2s. 6d. per ton.

FS—Manufacturers continue very busy, and feel least of all of the trade the close of the half-year. White and red lead d, and in regular demand. Dry mineral colours, £3. 10s. to 3d. to 8d. per lb. Black, blue, red oxide, venetian red, k green, and yellow ochre paints from £11. per ton. Ready tints, best brands, in good demand, from £24. per ton. Cover, 25s. per cwt. Imperial black varnish, £5. 10s. per barrels. Oak varnish, from 5s. 6d. per gallon.

## LIVERPOOL OIL AND COLOUR MARKET.

WEDNESDAY.

—Palm oil is being steadily held, and is in very short supply. Hence there is but little business doing, and that of no importance is rather better, prices being steady, with a nice little business doing. Linseed is quiet. Liverpool makes in export slightly easier, at 18s. to 20s. per cwt. Cottonseed is

Prices are steady, but, as the demand is halting, a concession can be obtained on the current values of 16s. 3d. to 17s. for refined. American is easier, at 16s. 9d. per cwt. Castor oil the best sections of the market, a healthy tone prevailing. It is very firm, at 2¾d. to 3d. for good seconds Calcutta, which is short supply. First pressure French is quoted 2½d. per lb. and is firm thereat. Tallow is still featureless, price being unaltered. Resin is steady, but prices are practically as there is next to nothing doing. Spirits of turpentine have on the retrograde, and have now settled down fairly steady, at 20s. 6d. spot. Petroleum is steady, with American, 6¼d. and Russian refined 5¾d. per gallon.

URS.—Prices are steady, and practically without change. Oxfordshire, common, £10., medium, £12., best, £15. e, common, 40s.; medium, 50s., best, 60s.; Welsh, best, 50s., and common, 18s.; Irish, Devonshire, 40s. to 45s., J.C., 65s. Umber: 40s. to 45s. White lead, £16. unchanged. Venetian red, £6. to £10. Cobalt: Prussian blue, 9s. 9d.; black, 9s.; blue, 6s. Oxide of iron: Common, £10.; finest, £20. Zinc oxide, £22. 10s. to £25.

## WEST OF SCOTLAND CHEMICALS.

GLASGOW, TUESDAY.

There are very few changes to note as regards the standard chemicals of improvement recorded last week is maintained, but no change in that, and prices for the most part are unaltered. Sulphate is the chief exception, having given way appreciably. Bicarbonate of potash and bichromate of soda are steady at the old prices. Mineral oils and paraffins are all unchanged, with a passing, the present being about the middle of the off season, and makers stocking mainly against the demands of the next American refined petroleum has been picking up in price which is so far in favour of the home industry. Sulphate of soda is a shade better at about £7. 18s. 9d., spot, Leith. For the week or two forward £8. has been got.

Prices current are:—Soda crystals, £2. 2s. 6d., nett, Tyne; 48/52°, £4. to £4. 15s. nett, Tyne; white alkali, 10s. to £5. nett, Tyne; alum in lump, £5. to £5. 5s. nett, caustic soda, white, 74° £8. 7s. 6d., 70/72° £7. 7s. 6d., 60/62°, and cream 60/62° £6. 7s. 6d., all nett, Liverpool; bleaching 6. 17s. 6d. nett, Tyne; saltcake, 23s. 6d.; borax, English, 10., and boracic acid, £30. nett, Glasgow; bicarbonate of soda, £6. 10s., and 1-cwt. casks £6. 15s. nett, Liverpool; of potash, 4½d. nett, for Scotch and English deliveries (for d. nett, f.o.b. Glasgow); bichromate of soda, 3¾d. nett, for English deliveries (for export, 3½d. nett, f.o.b. Glasgow); potash, 4½d. less 5%, any port; nitrate of soda, 7s. 9d. to sulphate of ammonia, £7. 18s. 9d. prompt, f.o.b., Leith; salt: first and second white, £37. and £35. nett, any port; copper, £17. 15s. less 5%, Liverpool; paraffin scale, hard,

1½d. to 1¾d., and soft, 1¾d. to 2d. per lb.; paraffin wax, 120° semi-refined, 2½d. to 2¾d. per lb.; paraffin spirit (naphtha), 7d. per gallon; paraffin oil (burning) No. 1, 6¼d., and crystal, 6½d., at Glasgow and other big centres, for Scotch buyers (English sales ½d. to ¾d. lower); ditto (lubricating) 865° £4. 10s. to £5., 885° £5. 10s. to £6., and 890/895° £6. to £6. 10s. Week's imports of sugar at Greenock were 26,400 bags beet unrefined, 37,101 bags jaggery unrefined, and 1,250 bags grape.

## TYNE CHEMICAL REPORT.

TUESDAY.

There is no change to report in the local chemical market, which continues quiet, with prices unaltered. Bleach is quoted at £6. 10s. and £7. 5s. per ton, according to destination. Soda crystals, £2. 2s. 6d. per ton, gross weight, locally. Sulphur scarce at £4. per ton. Other quotations as under:

Bleaching powder, softs, £7. 5s. per ton, nett; hards, £7. 10s. per ton, nett; caustic soda, 76/77%, £9. 5s. per ton, nett; do., 70%, £7. 15s. per ton, nett; recovered sulphur, 2 cwt. bags, £4. per ton, nett; soda ash, 48%, £4. per ton, nett; do., 50%, £4. 3s. 4d. per ton, nett; do., 52%, £4. 6s. 8d. per ton, nett; alkali, 36%, £2. 15s. per ton, nett; white alkali, 48%, £4. 10s. per ton, nett; do., 50%, £4. 15s. per ton, nett; do., 52%, £5. per ton, nett; hyposulphite of soda, 5-7 cwt. casks, £6. 5s. per ton, nett; do., 1 cwt. kegs, £7. per ton, nett; silicate of soda, 75° Tw., £2. 12s. 6d. per ton, nett; do., 100° Tw., £3. per ton, nett; do., 140° Tw., £3. 7s. 6d. per ton, nett; soda crystals, casks, £2. 2s. 6d. per ton, gross weight; do., 2 cwt. bags, £2. 2s. 6d. per ton, nett weight; chlorate of potash, 5d. per lb., less 6%; pearl hardening, £3. per ton, nett; pure white sulphate of alumina, £3. 17s. 6d. per ton, nett; blanc fixe, £7. 5s. per ton, nett; chloride of barium, refined crystals, £6. 15s. per ton, nett; do., 90/95%, crude calcined, £6. per ton, nett; sulphide of barium, crystals, £4. 15s. per ton, nett; carbonate of alumina, £30. per ton, nett; aluminate of soda, £30. per ton, nett.

SALT.—South Durham salt steady at 9s. and 9s. 6d. per ton, f.o.b., Tees.

COALS.—Business is only slow, as is usual just before the holidays (this being the local race week). Best steam coal in good demand, and coke steady at undermentioned quotations. Gas and household coal dull, the consumption being at its lowest point. Best Northumbrian steam, 8s. 6d. to 8s. 9d. per ton; second qualities, steam, 7s. 6d. to 7s. 9d. per ton; small steam, 3s. 9d. to 4s. per ton; gas coals, 6s. 3d. to 6s. 6d. per ton; bunker coals, unscreened, 6s. 3d. to 6s. 6d.; household coals dull at 10s. to 10s. 6d.; coke firm, 15s. 6d. to 16s. per ton.

## New Companies.

**New Transvaal Chemical Co., Ltd.**—CAPITAL £16,000., in shares of £1. each. This company has been formed to acquire the Transvaal Chemical Co., Ltd., and to trade as manufacturers and dealers in sulphuric acid and all kinds of chemicals. The subscribers to the memorandum of association are:—C. T. Perrott, Tenter-street, Moorfields, agent; W. L. Bouse, Burrock, Dundee, manufacturer; G. H. L. Bouse, St. Andrew's Buildings, Dundee, manufacturer; E. L. Bouse, 1, Links-place, Leven, Fife, spinner; W. Hunter, 19, Wellgate, Dundee, warehouseman; T. Bell, Dundee, merchant; R. A. Murray, 163, West George-street, Glasgow, C.A.

**Icke and Co., Ltd.**—CAPITAL £30,000., in £10. shares. This company has been formed to acquire the business of Messrs. Icke, Hilton, and Jones, and to trade as drysalts and chemists, &c. The subscribers to the memorandum of association are:—C. Icke, 18, Golden Hillock-road, Birmingham, confectioner; Mrs. B. Icke, 18, Golden Hillock-road, Birmingham; J. H. Hilton, 266, Stratford-road, Birmingham, confectioner; Mrs. M. Hilton, 266, Stratford-road, Birmingham; A. Jones, Albert-road, Stechford, near Birmingham, confectioner; Mrs. E. Jones, Albert-road, Stechford, near Birmingham; J. W. Icke, 99, Gt. Brook-street, Birmingham, clerk.

**Forbes, Abbott, and Lennard, Ltd.**—CAPITAL £250,000., in 5,000 preference shares of £10. each and 18,182 ordinary shares of £11. each. The company has been formed to acquire and carry on the business of tar distillers, chemical manufacturers, salt masters, &c., now being carried on at London, Shoreham, Rye, and Greenwich. The subscribers to the memorandum of association are:—J. Forbes, 70, Gracechurch-street, E.C., manufacturing chemist; J. Abbott, 70, Gracechurch-street, E.C., manufacturing chemist; F. Lennard, 70, Gracechurch-street, E.C., manufacturing chemist; F. Ince, St. Benet Chambers, Fenchurch-street, E.C., solicitor; T. G. Fletcher, St. Anne's Wharf, Limehouse, E., merchant; J. S. Field, 28, Annandale-road, Greenwich, manufacturer; W. P. Partridge, 4, Billiter-street, E.C., agent.



**Magnolia Metal Co., Ltd.**—CAPITAL £1,000., in £1. shares. Under this title a company has been formed to trade as founders and mechanical engineers.

**Rubber Exploration Co., Ltd.**—CAPITAL £200,000, in shares of £1 each. This company has been formed to carry on the business of rubber-tree growers and rubber merchants, &c. The subscribers to the memorandum of association are:—H. Evans, 1, Sutherland-road, Bow, stationer; D. Jamieson, 30, Moorgate-street, E.C., commissionaire; H. L. Rydon, Highbury New Park, N., clerk; L. Wilson, 14, Alleyn-road, Dulwich, agent; J. Collins, 15, Fleur-de-Lis-street, E., botanist; T. Miller, 19, Buckland-street, New North-road, N., clerk; and T. W. Wheeler, 30, Moorgate-street, E.C., housekeeper.

**Chloro-Cyanide Manufacturing and Gold Extraction Syndicate, Ltd.**—CAPITAL £30,000., in £1. shares. This company has been formed to acquire the patents of G. J. Atkins for the manufacture of compounds of chlorine and cyanogen with certain metals for the separation of metals from their ores. The subscribers to the memorandum of association are:—P. F. Gaunt, 19, Victoria-avenue, Upton Park, accountant; E. Applegarth, 2, Vernon Chambers, Southampton-row, engineer; H. Ince, 68, Warren-road, Leyton, bookkeeper; G. J. Atkins, 35, East Bank, Stamford Hill, chemist; W. J. Minson, 41, Aytoun-road, Stockwell, clerk; W. A. Battie, 1, Allison-road, Harringay, gentleman; J. Hassan, 13, Chaucer-road, Fore t Gate, gentleman.

## IMPORTS OF CHEMICAL PRODUCTS

AT

### THE PRINCIPAL PORTS OF THE UNITED KINGDOM

#### LONDON.

Week ending June 13th.

**Acetic Acid**—  
Holland, 100 pks. R. W. Greeff & Co.

**Acetone**—  
Germany, 12 pks. Thames S. T. & L. Co.  
Holland, 2 cks. G. Rahn & Co.

**Alkali**—  
Canada, 48 c. J. Barber & Co.

**Aluminium**—  
Belgium, £150 Krayner, Back & Co.  
" 156 Sawyer, Sons & Co.

**Antimony Ore**—  
Newcastle, N.S.W., 6 t Vivian, Younger & Co.

**Asbestos**—  
Italy, £100 London Asbestos Co.  
" 250 Imperial Asbestos Co.  
Germany, 75 T. H. Lee

" 40 T. Boorn  
" 316 Brit. Asbestos Co.  
" 550 Bender & Martin  
" 16 Craven & Co.  
Holland, 11 Philipps & Graves  
Italy, 1,200 Capt. Dundas

**Barytes**—  
Holland, 23 cks. Soundy & Sons  
Belgium, 133 W. Harrison & Co.  
Holland, 101  
" 21 O'Hara & Hoar  
Germany, 19 P. Jantzen  
Holland, 88 Taylor Biss.  
Germany, 44 W. Harrison & Co.

**Bone Meal**—  
E. Indies, 559 t Fox, Roy & Co.

**Boric Acid**—  
Italy, 9 cks. Beresford & Co.

**Camphor**—  
Germany, 100 cs. Hale & Son

**Caoutchouc**—  
E. Indies, 40 c. Ralli Biss.  
U. States, 13 Stiebel Biss.  
E. London, 120 Hammond & Co.  
E. Indies, 214 Ross & Deering  
" 17 Stewart Hall  
" 66 Prop. Bull Wf.  
Rangoon, 83 L. & I. D. Jt. Co.  
Belgium, 15 D. C. Thomas & Sons

Aden, 19 Hale & Son

**Carbonic Acid**—  
Germany, 40 pks. Krayner, Back & Co.  
Holland, 78 J. Owen

**Castor Oil**—  
E. Indies, 100 cs. W. M. Smith & Sons  
Belgium, 12 brls. A. Brown & Co.

" 30 Burrell & Co.  
Italy, 20 City Coml. Wf. Co.  
France, 58 R. G. Hall & Co.  
Italy, 25 Stebbings & Co.  
France, 6 L. & I. D. Jt. Co.

E. Indies, 44 cks. Ross & Deering  
France, 160 cs. Spencer's Wf. Ld  
Italy, 35 Barron, Harveys & Co.

**Caustic Potash**—  
France, 46 drs. W. E. Cole  
" 100 J. Barber & Co.

#### Chemicals (otherwise under.)—

Belgium, £75 H. Wallace & Co.  
Holland, 149 J. Barber & Co.  
" 30 Philipps & Graves  
France, 58 Flageolet & Co.  
" 24 Mory & Co.  
Belgium, 138 Société John Cockerill

Germany, 111 T. H. Lee  
Sweden, 15 M. D. Co.  
Norway, 10  
Germany, 278 L. & I. D. Jt. Co.  
Italy, 34 Hughes, Chemery & Co.

Germany, 23 Craved & Co.  
U. States, 110 Lunham & Moore  
Germany, 864 A. & M. Zimmermann

France, 95 Tjpk & King  
Holland, 417 T. H. Lee

**Citrate of Lime**—  
Italy, 22 cks. Thames S. Tug & L. Co.

**Cream of Tartar**—  
Holland, 40 cks. Kirkpatrick & Co.  
France, 5 5 pks. B. & F. Wf. Co.  
" 7 W. C. Bacon & Co.  
Italy, 25 B. Jacob & Sons  
Spain, 5 W. C. Bacon & Co.

**Dyestuffs**—  
**Aniline**  
Belgium, 13 cs. P. & O. Co.

**Annatto**  
France, 4 cks. C. Faust & Co.  
E. Indies, 7 bgs. G. & H. Green

**Anthracene**  
Germany, 279 cks. Burt, Boulton & Co.

**Argols**  
Italy, 406 bgs. B. Jacob & Sons  
" 99 Thames S. Tug & L. Co.

Greece, 22 cs. M. P. Keocharis

**Cochineal**  
Canaries, 30 bgs. Brit. & Col. S. N. Co.

**Cutch**  
Rangoon, 160 bxs. Dalton & Young  
" 280 Bulloch Biss. & Co.  
Singapore, 1,000 J. Jones  
Rangoon, 105 A. B. Curtis & Co.  
" 250 Leach & Co.  
Germany, 50  
" 5 cs. L. & I. D. Jt. Co.

**Divi Divi**  
E. Indies, 325 bgs. Walker, Munzie & Co.

**Extracts**  
France, 1 ck. B. & F. Wf. Co.  
Germany, 10 T. H. Lee  
Denmark, 2 pks. M. D. Co.  
Germany, 10 Boutcher, Mortimore & Co.

France, 30 Beresford & Co.  
" 100 bxs. T. H. Lee

**Gambier**  
Singapore, 245 bls. Union L. Co.  
" 357 bgs. Brinkmann & Co.

Holland, 157 Beresford & Co.

**Indigo**  
E. Indies, 142 chits. Wallace Biss.  
" 24 Forbes, Forbes & Co.

" 10 Elkan & Co.  
" 25 R. von Glehn & Sons

" 9 P. Macfadyen & Co.  
" 21 Croysdale & Co.

Belgium, 2 Société John Cockerill

E. Indies, 28 Binny & Co.  
" 3 Mer. Bk. of India  
" 58 J. Owen  
" 93 L. & I. D. Jt. Co.

**Logwood**  
W. Indies, 12 t. Carvalho Biss. & Co.  
" 18 Park Macfadyen & Co.

**Myrabolams**  
E. Indies, 334 bgs. L. & I. D. Jt. Co.  
" 670 W. Sheldott  
" 1,450 Dalton & Young  
" 2,782 J. Greig

" 400 E. T. Winsor & Co.  
" 2,846 Baxter & Hoare  
" 1,276 S. Barrow & Bro.

**Saffron**  
Spain, 1 cs. J. Knill & Co.

**Shumac**  
Italy, 500 bgs. Scandy & Sons  
" 25 J. Kitchen, Ld.  
" 500 H. & G. Dufield  
" 600 Harris Biss.

**Tanners' Bark**  
Adelaide, 165 t. Baxter & Hoare  
Auckland, 16 G. N. Souralt & Co.

Adelaide, 134 R. Brooks & Co.  
" 37 Beresford & Co.  
Natal, 30 A. & W. Nesbitt  
Belgium, 49 Leach & Co.

**Turmeric**  
E. Indies, 46 bgs. Ralli Biss.  
" 198 G. & H. Green

**Valonia**  
France, 20 t. F. Claydon & Co.  
A. Turkey, 19 M. D. Co.

**Farina**  
Holland, 30 bgs. J. Knill & Co.  
Germany, 50 pks. Drolenvaux & Brenner

Germany, 50 J. Knill & Co.

**French Chalk**  
Italy, 200 bgs. Harrison & Co.

**Glucose**  
U. States, 100 pks. 750 c. T. J. Lipton  
" 985 5,660 c. Bellamy & Co.  
" 250 1,458 E. & T. Pink  
" 1,000 1,000 G. Clark & Sons

" 50 320 C. Southwell & Co.  
Holland, 50 50 J. Barber & Co.  
U. States, 1,750 3,000 Deering & Robottom

" 1,025 4 225 L. Sutro & Co.  
" 650 650 Fellows,  
" 550 788 Morton & Co.

" 500 500 Ohlenschlager Biss.  
" 250 1,375 J. Fulford  
" 250 250 T. M. Duche & Sons

" 250 250 Pearce, Pelly & Co.  
" 500 620 Fenton, Levy & Co.  
" 50 286 Freeman & Co.

" 1,000 1,000 W. Grose & Co.  
" 205 975 L. Norman & Co.

France, 200 200 G. Clark & Son

U. States, 50 300 S. E. Railway Co.

" 999 5,789 R. G. Hall & Co.

" 103 610 Page, Son & East

#### Glue—

" £1,534

**Lead Acetate**—  
Holland, 18 cks. G. Rahn & Co.

**Litharge**—  
Holland, 4 cks. Spies Biss. & Co.  
" 3 J. Owen

**Manganese**—  
Germany, £35 J. Barber & Co.

**Manure**—  
Brisbane, 50 t. Hopcraft & Broadwater  
E. Indies, 10 A. Hunter & Co.

**Metallic Oxide**—  
Germany, 1 ck. Brit. Anti-Fouling C. Co.

**Methyl Alcohol**—  
Germany, 14 dms. L. & I. D. Jt. Co.

**Mica**—  
E. I., £1,180 E. Davis & Co.  
" 3,784 W. M. Smith & Sons

**Molasses**—  
W. Indies, 250 cks. Co-op. Lighters Association

**Naphtha**—  
Spain, 68 brls. Burt, Boulton & Co.

**Ochre**—  
Holland, 34 pks. Philipps & Graves  
France, 2 Bennett S. S. Co.  
U. States, 65 Taylor Biss.  
France, 234 cks. W. Harrison & Co.  
" 67 Union L. Co., Ld.  
" 4 O'Hara & Hoar  
Spain, 50 bgs. Burrell & Co.

**Oxalic Acid**—  
Norway, 2 pks. M. D. Co.

**Paint**—  
Germany, 2 cs. T. H. Lee

**Phosphate Rock**—  
Belgium, 215 t. West & Penrose  
" 250 Anglo-Contl. G. Wks.  
France, 280 A. Hunter & Co.

**Plumbago**—  
Ceylon, 106 cks. C. Rowbotham  
Germany, 119 B. Galloway

**Potash**—  
Belgium, 55 dms. A. B. Curtis & Co.  
Canada, 100 c. Charles & Fox

**Potassium Bicarbonate**—  
Holland, 29 cks. A. & M. Zimmermann

**Potassium Bichromate**—  
France, 45 drs. Philipps & Graves

**Potassium Carbonate**—  
Germany, 400 c. Perkins & Hame

**Potassium Chloride**—  
Germany, 490 bgs. Bessler, Wachter, & Co.

**Potassium Sulphate**—  
Belgium, 50 bgs. Charles & Fox  
Germany, 170 W. G. Hladim

**Quicksilver**—  
Spain, 36 brls. H. J. Enthoven & Son

**Rosin**—  
France, 2 brls. W. Harrison & Co.  
U. States, 700 Moore & Hale

" 2,593 Fairclough, Dodd, & Jann

" 1,500 Prod. Brokers' Co.

**Rosin Oil**—  
France, 100 brls. C. B. Leight  
" 50 pks. C. Price & Co.



**Saltpetre—**

Germany, 69 cks. P. Hecker & Co.  
 " 13 L. & I. D. Jt. Co.  
 " 10 Petri Bros.  
 Ceylon, 1,375 bgs. C. Wimbly & Co.

**Soda Ash—**

Holland, 2,000 c. R. Waters

**Sodium—**

Holland, 15 pks. Beresford & Co.

**Sodium Bichromate—**

Germany, 400 c. C. Tennant, Sons, & Co.

**Sodium Prussiate—**

Belgium, 128 c. Perkins & Homer

**Starch—**

Holland, 195 cs. T. H. Lee  
 Belgium, 140 Beck & Pollitzer  
 " 200 A. B. Curtis & Co.  
 France, 40 26 pks. B. & F. Wf Co.

Melbourne, 2 Seaward Bros.

U. States, 100 bgs. R. G. Hall & Co.

Holland, 100 J. Barber & Co.

" 250 Hernu, Peron, & Co.

" 666 L. Souto & Co.

U. States, 100 bgs. Home & Co.

Germany, 1,040 cs. Little & Johnston

Holland, 666 Phillips & Graves

Belgium, 108 Leach & Co.

" 470 Sawyer, Sons, & Co.

" 1,000 Taylor Bros.

Germany, 710 E. & T. Pink

" 10 bgs. T. H. Lee

" 10 Phillips & Graves

" 200 C. Tennant, Sons, & Co.

Belgium, 505 2 bgs. T. H. Lee

" 40 T. Ronaldson & Co.

**Stearine—**

Belgium, 76 bgs. C. S. Lovell

" 631 H. Hill & Sons

**Sulphur—**

Italy, 37 t. W. C. Bacon & Co.

France, 2 Taylor Bros.

Italy, 8 R. Morrison & Co.

" 203 Union L. Co.

**Talc—**

France, 440 G. G. Blackwell, Sons, & Co.

E. Indies, 365 E. Davis & Co.

**Tartaric Acid—**

Italy, 12 pks. 22 cks. B. & F. Wf Co.

" 13 W. M. Smith & Sons

" 6 6 cks. F. C. Devon & Co.

France, 6 B. & F. Wf Co.

**Ultramarine—**

Germany, 9 cs. H. Brooks & Co.

" 10 Haeflner, Hilpert, & Co.

Holland, 10 G. Rahn & Co.

" 8 cks. J. Barber & Co.

" 2 cs. 5 pks. Hernu, Peron, & Co.

Germany, 4 cks. Henderson, Craig, & Co.

**Varnish—**

Germany, 39 pks. H. Lambert

U. States, 1 L. & I. D. Jt. Co.

" 5 H. Davies

" 47 Lunham & Moore

" 12 Dawson Bros.

**Vermilion—**

Hong Kong, 10 cs. L. & I. D. Jt. Co.

**White Lead—**

Germany, 20 cks. Taylor Bros.

" 36 D. Storer & Sons

" 200 Petri Bros.

" 36 Randall Bros.

Holland, 50 T. & W. Farmiloe

France, 19 J. Watt & Son

Belgium, 41 J. L. Lyon & Co.

Germany, 4 kgs. W. B. Dick & Co.

Holland, 20 cks. E. J. Diggins

" 20 A. & M. Zimmermann

**Wood Pulp—**

U. States, 574 pks. Furness, Withy, & Co.

Holland, 3 J. Owen

Norway, 250 Tough & Henderson

" 900 Ekman Pulp and Paper Co.

" 700 W. E. Bott & Co.

Sweden, 240 W. G. Taylor & Co.

Norway, 80 " "

Sweden, 4,702 Ekman Pulp and Paper Co.

Belgium, 2,294 E. J. & W. Goldsmith

**Zinc Oxide—**

Holland, 100 brls. M. Ashby, Ltd.  
 " 500 cks. Soundy & Sons  
 Germany, 165 brls. M. Ashby, Ltd.

**LIVERPOOL.**

Week ending June 11th

**Acetate of Lime—**

New York, 1,615 bgs.

**Acetic Acid—**

Rotterdam, 305 cs.

**Albumen—**

Lisbon, 1 ck. Egerton Cheml. Co.

**Antimony—**

Marseilles, 21 cs.

**Antifagasta, 450 bgs.****Antimony Ore—**

Antifagasta, 174 bgs.

**Arsenic—**

Trieste, 1 brl.

**Asbestos—**

Quebec, 1,000 bgs.

**Barytes—**

Antwerp, 54 cks.

Rotterdam, 45

Hamburg, 10

**Bone Ash—**

Zarate, 210 bgs. J. Nelson & Sons, Ltd.

**Castor Oil—**

Marseilles, 200 brls. 30 cs.

**Colours—**

Ghent, 2 brls. J. T. Fletcher & Co.

Hamburg, 6 cks.

Rotterdam, 8

**Cottonseed Oil—**

N. Orleans, 270 brls.

**Cream of Tartar—**

Tarragona, 5 bts. Sachse & Klemm

**Dyestuffs—****Alizarine**

Karachi, 1 pk.

**Annatto**

Rotterdam, 2 carboys

**Argols**

Oporto, 110 cks. German Bank of London

**Cochineal**

Gd. Canary, 10 bgs. Burrell & Co.

**Cutch**

Rangoon, 2,802 bxs.

**Divi Divi**

Hamburg, 346 bgs.

**Extracts**

Philadelphia, 230 pks.

**Fustic**

Tampico, 11,643 ps. D. Midgley & Son

" 2,127 Jelling & Co.

" 2,139 Gruning & Co.

" 4,786 W. H. Thompson & Co.

Vera Cruz, 503 Ledward & Bibby & Co.

**Gambier**

Singapore, 2,462 bls.

**Logwood**

Kingston, 15 t. 15 c.

**Myrabolams**

Bombay, 2,789 bgs.

" 670 Arbutnot, Ewart & Co.

" 350 Aldridge, Salmon & Co.

" 1,543 D. Sassoon & Co.

" 198 Ralli Bros.

**Orchella**

Hamburg, 13 bgs.

**Saffron**

Valencia, 1 cs.

**Shumac**

Bordeaux, 150 bls.

Palermo, 975 bgs.

Marseilles, 100 H. Rooke & Sons

**Yalonia**

Patras, 2,002 bgs. Papayanni & Jeremias

" 112 " "

" 191 Ath. Coliofas

Dragamesta, 600 C. G. Papayanni & Co.

" 1,500 Jeremias & Co.

**Farina—**

Stettin, 50 bgs.

Fiume, 80 Van der Veer & Birs.

" 260 " "

**Glucose—**

Dunkirk, 200 bgs.

New York, 450 brls.

Boston, 450

**Glue—**

Rotterdam, 20 bgs.

St. Nazaire, 29 cks.

Hamburg, 20

Fiume, 100 T. M. Duche & Sons

Rouen, 20 bls. 18

" 5

**Lead Acetate—**

Hamburg, 33 cks.

**Limestone—**

Antwerp, 2 cs. 2 crts. J. T. Fletcher & Co.

" 2 2 pks.

Lisbon, 100 brls. Pinto, Leite & Nephew

**Magnesia—**

Trieste, 2 cs.

**Manganese—**

Odessa, 31,000 poods

**Manganese Ore—**

Bordeaux, 2 bgs.

Carriaz, 1,000 t.

**Manure—**

Philadelphia, 153 bgs

**Naphtha—**

New York, 3,750 brls.

**Naphthaline—**

Constantinople, 7 brls. R. Shaw, Ltd.

**Ochre—**

New York, 70 brls. J. Patterson & Co.

Marseilles, 11

Rouen, 28 cks.

**Paint—**

Hamburg, 40 cs.

Boston, 20 Leech & Co.

Bombay, 1 Pitt & Scott

**Paraffin Scale—**

Baltimore, 100 brls.

Philadelphia, 156

New York, 995 Thompson & Bedford

**Phosphates—**

Ghent, 250 bgs.

Bona, 3,120 t. 370

**Phosphoric Acid—**

Bremen, 15 cks.

**Pitch—**

Amsterdam, 51 cks.

Rotterdam, 15

**Potash—**

Dunkirk, 63 dms.

**Pumice Stone—**

Teneriffe, 922 bgs.

Marseilles, 1 ck.

**Pyrites—**

Huelva, 1,868 t. Matheson & Co.

**Rosin—**

Ceara, 36 bgs. Roseng Bros. & Co.

Marseilles, 5 cs.

Wilmington, 3,793 brls.

**Saltpetre—**

Hamburg, 7 cks.

**Soap—**

Hamburg, 2 cs.

Philadelphia, 3 D. Chollen, Ltd.

Patras, 341 hf.-cs. 14 pks.

Marseilles, 4 pks. J. Thompson, Ltd.

" 1 cs. 13 bxs

Boston, 8 W. Foggith

" 4 Barclay & Sons

**Soapstone—**

Bordeaux, 400 bgs. G. G. Blackwell, Sons & Co.

Philadelphia, 100

Genoa, 100

**Sodium Nitrate—**

Iquique, 11,040 bgs.

" 632 Balfour Williamson

Caleta Buena, 3,657

**Sodium Silicate—**

Philadelphia, 1 brl. J. Hudspith

**Starch—**

Baltimore, 400 bgs.

Antwerp, 317 cs. J. T. Fletcher & Co.

Rotterdam, 50

Hamburg, 68

Philadelphia, 400 cks.

Bremen, 5 bgs.

Boston, 424

**Stearine—**

Baltimore, 50 tcs.

Marseilles, 10 bgs.

**Tallow—**

New York, 150 tcs.

" W'sale Co-op. Society, Ltd.

Philadelphia, 63

Boston, 64 bds. Stotterfoht & Co.

Zarate, 140 pps. J. Nelson & Sons, Ltd.

New York, 107

Boston, 425



|                                               |                                |
|-----------------------------------------------|--------------------------------|
| <b>Litharge</b> —<br>Rotterdam, 15 cks.       |                                |
| <b>Ochre</b> —<br>Treport, 70 cks.            |                                |
| <b>Pyrites</b> —<br>Huelva, 1,420 t.          |                                |
| <b>Soda</b> —<br>Rotterdam, 1 ck.             |                                |
| <b>Sodium Nitrate</b> —<br>Rotterdam, 7 cks.  |                                |
| <b>Starch</b> —<br>Ghent, 66 cs.              | J. T. Fletcher & Co.           |
| <b>Sulphuric Acid</b> —<br>Rotterdam, 10 cks. |                                |
| <b>Tartaric Acid</b> —<br>Rotterdam, 21 cks.  |                                |
| <b>Waste Salt</b> —<br>Hamburg, qty.          |                                |
| <b>Wood Pulp</b> —<br>Gothenburg, 2,570 bls.  | 60 pks.                        |
|                                               | Rotterdam, 76                  |
|                                               | Hamburg, 480                   |
|                                               | Sundswall, 8,298               |
|                                               | Christopherson, Andrews, & Co. |
| <b>Zinc Ashes</b> —<br>Rotterdam, 18 cks.     |                                |
| <b>Zinc Oxide</b> —<br>Rotterdam, 10 cks.     | 20 brls.                       |
| <b>Zinc White</b> —<br>Rotterdam, 50 cks.     | 70 brls.                       |

**HULL.**

Week ending June 13th.

|                                                             |                                  |
|-------------------------------------------------------------|----------------------------------|
| <b>Barytes</b> —<br>Antwerp, 233 cks.                       | H. F. Pudsey                     |
|                                                             | Rotterdam, 84                    |
|                                                             | Hutchinson & Son                 |
| <b>Carbolic Acid</b> —<br>Rotterdam, 13 cks.                | Wilson, Sons, & Co., Ltd.        |
| <b>Chemicals (otherwise undescribed)</b> —<br>Bremen, 2 cs. | Veltmann & Co.                   |
|                                                             | Rotterdam, 1 ck.                 |
|                                                             | W. & C. L. Ringrose              |
|                                                             | Antwerp, 15 pks.                 |
|                                                             | Sons, & Co., Ltd.                |
|                                                             | Hamburg, 1 cs.                   |
| <b>Cod Oil</b> —<br>Alesund, 158 brls.                      | Wilson, Sons, & Co., Ltd.        |
|                                                             | Bergen, 3                        |
| <b>Colours</b> —<br>Hamburg, 6 cks.                         | Todd & Son                       |
|                                                             | Bremen, 2                        |
|                                                             | Rotterdam, 4 brls.               |
|                                                             | 3 bxs. Wilson, Sons, & Co., Ltd. |
|                                                             | "                                |
|                                                             | Ghent, 5                         |
|                                                             | New York, 68                     |
|                                                             | Hamburg, 1 ck.                   |
|                                                             | Antwerp, 2                       |
|                                                             | Storry, Smithson, & Co.          |
|                                                             | Hamburg, 50                      |
|                                                             | Antwerp, 13 pks.                 |
|                                                             | Wilson, Sons, & Co., Ltd.        |
|                                                             | Rotterdam, 14 cks.               |
|                                                             | 12 cs. W. & C. L. Ringrose       |
|                                                             | 145 brls. 9 bxs.                 |
| <b>Dextrine</b> —<br>Stettin, 250 bgs.                      | Wilson, Sons, & Co., Ltd.        |
| <b>Dyestuffs</b> —<br>Alizarine<br>Rotterdam, 16 brls.      | Hutchinson & Son                 |
|                                                             | "                                |
|                                                             | 15                               |
|                                                             | 7 cks. W. & C. L. Ringrose       |
| <b>Madder</b> —<br>Rotterdam, 2 cks.                        | Hutchinson & Son                 |
| <b>Farina</b> —<br>Harlingen, 125 bgs.                      | W. & C. L. Ringrose              |
|                                                             | Hamburg, 50                      |
|                                                             | Sons, & Co., Ltd.                |
|                                                             | Rotterdam, 500                   |
|                                                             | Stettin, 610                     |
|                                                             | "                                |
|                                                             | Ghent, 340 cs.                   |
|                                                             | Harlingen, 50 bls.               |
|                                                             | Antwerp, 25 bgs.                 |
|                                                             | Wilson, Sons, & Co., Ltd.        |
| <b>Glucose</b> —<br>Stettin, 400 bgs.                       | Wilson, Sons, & Co., Ltd.        |

|                                              |                                    |
|----------------------------------------------|------------------------------------|
| <b>New York</b> , 250                        | 50 brls.                           |
| <b>Boston</b> , 11                           |                                    |
| <b>Glue</b> —<br>Antwerp, 1 ck.              | Bailey & Leatham                   |
|                                              | Hamburg, 20 bgs.                   |
|                                              | Rotterdam, 10 bls.                 |
|                                              | Hutchinson & Son                   |
|                                              | Stettin, 60 bgs.                   |
|                                              | Rouen, 3 cks.                      |
|                                              | Rawson & Robinson                  |
| <b>Kaolin</b> —<br>Rotterdam, 118 bgs.       | Hutchinson & Son                   |
| <b>Lithopone</b> —<br>Amsterdam, 10 cks.     | Hutchinson & Son                   |
| <b>Ochre</b> —<br>Rouen, 5 cks.              | Rawson & Robinson                  |
| <b>Paint</b> —<br>New York, 46 pks.          | Wilson, Sons, & Co., Ltd.          |
|                                              | Boston, 50 cs.                     |
|                                              | "                                  |
| <b>Phosphate</b> —<br>Ghent, 510 bgs.        | 50 t.                              |
| <b>Pitch</b> —<br>Amsterdam, 26 cks.         | Hutchinson & Son                   |
| <b>Potash</b> —<br>Rotterdam, 22 cks.        | Hutchinson & Son                   |
|                                              | Dunkirk, 8                         |
|                                              | 29 pks. Wilson, Sons, & Co., Ltd.  |
| <b>Saltpetre</b> —<br>Antwerp, 135 bgs.      | Wilson, Sons, & Co., Ltd.          |
|                                              | Hamburg, 5 cks.                    |
|                                              | Bailey & Leatham                   |
| <b>Soap</b> —<br>Rotterdam, 2 cs.            | Hutchinson & Son                   |
| <b>Soda</b> —<br>Antwerp, 650 bgs.           | Wilson, Sons, & Co., Ltd.          |
| <b>Starch</b> —<br>Antwerp, 412 cs.          | Bailey & Leatham                   |
|                                              | "                                  |
|                                              | 120 cks. Furley & Co.              |
|                                              | Bremen, 2,849 cs.                  |
|                                              | Rotterdam, 142                     |
|                                              | Amsterdam, 40                      |
|                                              | Veltmann & Co.                     |
|                                              | Hutchinson & Son                   |
| <b>Stearine</b> —<br>Antwerp, 55 pks.        | Wilson, Sons, & Co., Ltd.          |
| <b>Tallow</b> —<br>New York, 75 tcs.         | 50 hds. Wilson, Sons, & Co., Ltd.  |
|                                              | Boston, 666 pks.                   |
|                                              | 130 hds. Wilson, Sons, & Co., Ltd. |
| <b>Tartar</b> —<br>Bordeaux, 9 cks.          | Rawson & Robinson                  |
| <b>Treacle</b> —<br>New York, 125 brls.      | Wilson, Sons, & Co., Ltd.          |
| <b>Turpentine</b> —<br>Bordeaux, 5 brls.     | Rawson & Robinson                  |
|                                              | Libau, 51                          |
| <b>Ultramarine</b> —<br>Rotterdam, 4 cks.    | Hutchinson & Son                   |
| <b>Varnish</b> —<br>New York, 20 brls.       | 15 bxs. Wilson, Sons, & Co., Ltd.  |
| <b>White Lead</b> —<br>Rotterdam, 9 cks.     | Hutchinson & Son                   |
|                                              | Amsterdam, 53                      |
|                                              | 22 W. & C. L. Ringrose             |
| <b>Wood Pulp</b> —<br>Gothenburg, 1,463 pks. | Wilson, Sons, & Co., Ltd.          |
|                                              | Hamburg, 400                       |
|                                              | Christiania, 1,531 bls.            |
|                                              | Drontheim, 960                     |
|                                              | Hamburg, 26                        |
|                                              | Bailey & Leatham                   |
| <b>Zinc Oxide</b> —<br>Hamburg, 5 cks.       |                                    |

**GLASGOW.**

Week ending June 18th.

|                                                |
|------------------------------------------------|
| <b>Acetate of Lime</b> —<br>New York, 751 bgs. |
| <b>Albumen</b> —<br>Antwerp, 6 cks.            |

|                                                       |                           |
|-------------------------------------------------------|---------------------------|
| <b>Alum</b> —<br>Antwerp, 20 bgs.                     |                           |
| <b>Barium Sulphate</b> —<br>Antwerp, 100 bgs.         |                           |
| <b>Barytes</b> —<br>Rotterdam, 86 cks.                |                           |
| <b>Biphosphate of Lime</b> —<br>Marseilles, 125 bgs.  |                           |
| <b>Castor Oil</b> —<br>Marseilles, 304 brls.          |                           |
|                                                       | Antwerp, 29 cks.          |
| <b>Chrome Alum</b> —<br>Rotterdam, 15 brls.           | J. Rankine & Son          |
| <b>Colours</b> —<br>Rotterdam, 3 cs.                  | 28 brls. J. Rankine & Son |
|                                                       | Antwerp, 5 cks.           |
|                                                       | Hamburg, 2                |
|                                                       | Rotterdam, 124 pks.       |
| <b>Cottonseed Oil</b> —<br>Baltimore, 160 brls.       |                           |
|                                                       | New York, 75              |
| <b>Cream of Tartar</b> —<br>Marseilles, 5 cks.        |                           |
| <b>Dyestuffs</b> —<br>Alizarine<br>Rotterdam, 8 brls. | J. Rankine & Son          |
|                                                       | "                         |
|                                                       | 67 pks.                   |
| <b>Extracts</b> —<br>Philadelphia, 50 brls.           |                           |
|                                                       | Antwerp, 2 cks.           |
| <b>Farina</b> —<br>Delfsryhl, 100 bgs.                |                           |
| <b>Glucose</b> —<br>New York, 449 brls.               |                           |
|                                                       | Philadelphia, 150         |
| <b>Glue</b> —<br>New York, 97 brls.                   |                           |
|                                                       | Boston, 10                |
|                                                       | Rotterdam, 4 cks.         |
|                                                       | 60 bgs. J. Rankine & Son  |
| <b>Lithopone</b> —<br>Rotterdam, 40 cks.              | J. Rankine & Son          |
| <b>Minium</b> —<br>Rotterdam, 18 cks.                 | J. Rankine & Son          |
| <b>Ochre</b> —<br>Marseilles, 35 brls.                |                           |
| <b>Paint</b> —<br>Philadelphia, 5 brls.               |                           |
|                                                       | New York, 4 cs.           |
| <b>Paraffin Scale</b> —<br>New York, 225 brls.        |                           |
| <b>Plumbago</b> —<br>Calcutta, 1 cs.                  |                           |
| <b>Potashes</b> —<br>Rotterdam, 32 cks.               | J. Rankine & Son          |
|                                                       | Montreal, 48 brls.        |
| <b>Potassium Sulphate</b> —<br>Rotterdam, 6 cks.      | J. Rankine & Son          |
| <b>Pyrites</b> —<br>Huelva, 1,986 t.                  | Tharsis Co.               |
| <b>Rosin</b> —<br>New York, 855 brls.                 |                           |
| <b>Saltpetre</b> —<br>Calcutta, 1 cs.                 |                           |
|                                                       | Hamburg, 8 cks.           |
|                                                       | 80 kgs. 3 brls.           |
| <b>Soap</b> —<br>Baltimore, 70 brls.                  | W. N. Gemmell & Co.       |
|                                                       | "                         |
|                                                       | 341                       |
| <b>Sodium Sulphate</b> —<br>Antwerp, 6 cks.           |                           |
| <b>Sodium Sulphide</b> —<br>Rotterdam, 1 brl.         | J. Rankine & Son          |
| <b>Starch</b> —<br>Philadelphia, 200 bgs.             |                           |
|                                                       | Baltimore, 200 cks.       |
|                                                       | "                         |
|                                                       | 600                       |
|                                                       | 20 bgs.                   |
| <b>Stearine</b> —<br>St. John s, N'fd., 10 cs.        |                           |
| <b>Tar</b> —<br>New York, 296 brls.                   |                           |
| <b>Treacle</b> —<br>New York, 50 brls.                |                           |
|                                                       | Philadelphia, 161         |
| <b>Varnish</b> —<br>New York, 24 brls.                |                           |
| <b>Waste Salt</b> —<br>Hamburg, 396 t.                | 1,320 bgs.                |

|                                           |                  |
|-------------------------------------------|------------------|
| <b>Wood Pulp</b> —<br>Drontheim, 240 bls. |                  |
|                                           | Christiania, 319 |
| <b>Zinc Oxide</b> —<br>Rotterdam, 60 cks. |                  |
|                                           | Antwerp, 45      |
| <b>Zinc White</b> —<br>Rotterdam, 50 cks. | J. Rankine & Son |

**TYNE.**

Week ending June 13th.

|                                                  |                      |
|--------------------------------------------------|----------------------|
| <b>Barium Carbonate</b> —<br>Rotterdam, 134 bgs. |                      |
| <b>Barytes</b> —<br>Antwerp, 400 bgs.            | Tyne S. S. Co.       |
| <b>Limestone</b> —<br>Antwerp, 1 crite.          | 3 cs. Tyne S. S. Co. |
| <b>Soap</b> —<br>Copenhagen, 20 cs.              |                      |
|                                                  | Rotterdam, 2         |
|                                                  | Tyne S. S. Co.       |
| <b>Starch</b> —<br>Rotterdam, 68 cs.             |                      |
| <b>Stearine</b> —<br>Antwerp, 6 bgs.             | Tyne S. S. Co.       |
| <b>Superphosphates</b> —<br>Antwerp, 100 bgs.    | Tyne S. S. Co.       |
| <b>Ultramarine</b> —<br>Rotterdam, 12 cks.       |                      |
| <b>Zinc Oxide</b> —<br>Antwerp, 13 brls.         | Tyne S. S. Co.       |

**GOOLE.**

Week ending June 17th.

|                                                                   |                   |
|-------------------------------------------------------------------|-------------------|
| <b>Alizarine</b> —<br>Rotterdam, 54 brls.                         | 1 cs.             |
| <b>Alkali</b> —<br>Calais, 11 cks.                                |                   |
| <b>Alum</b> —<br>Rotterdam, 12 cks.                               |                   |
| <b>Aniline</b> —<br>Hamburg, 1 ck.                                |                   |
|                                                                   | Amsterdam, 4      |
| <b>Antimony</b> —<br>Boulogne, 2 cks.                             |                   |
| <b>Barytes</b> —<br>Rotterdam, 12 cks.                            |                   |
| <b>Dyestuffs (otherwise undescribed)</b> —<br>Rotterdam, 140 cks. | 93 cs.            |
|                                                                   | Boulogne, 25      |
|                                                                   | 34 pks. 7         |
| <b>Glucose</b> —<br>Hamburg, 22 cks.                              |                   |
|                                                                   | Calais, 100 bgs.  |
| <b>Logwood</b> —<br>Jamaica, 507 t.                               |                   |
| <b>Plumbago</b> —<br>Boulogne, 1 ck.                              |                   |
| <b>Potash</b> —<br>Antwerp, 14 dms.                               |                   |
|                                                                   | Calais, 23        |
|                                                                   | Bruges, 2 cks. 20 |
| <b>Pyrites</b> —<br>Huelva, 1,366 t.                              |                   |
| <b>Rosin</b> —<br>Brunswick, 3,231 brls.                          |                   |
| <b>Saltpetre</b> —<br>Rotterdam, 100 bgs.                         |                   |
| <b>Soda</b> —<br>Rotterdam, 40 cks.                               |                   |
| <b>Tar</b> —<br>Rotterdam, 43 cks.                                |                   |
| <b>Waste Salt</b> —<br>Hamburg, 500 bgs.                          | 53                |

**GRIMSBY**

Week ending June 12

|                                            |                       |
|--------------------------------------------|-----------------------|
| <b>Caoutchouc</b> —<br>Antwerp, 8 pks.     |                       |
|                                            | Hamburg, 4 cs.        |
|                                            | Rotterdam, 1          |
| <b>Chemicals (otherwise un-</b>            |                       |
|                                            | Hamburg, 9 cks. 3 cs. |
|                                            | Rotterdam, 10         |
| <b>Coal Tar Dyes</b> —<br>Hamburg, 42 cks. |                       |



# EXPORTS OF CHEMICAL PRODUCTS OF THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

**LONDON.**

Week ending June 17th.

|                            |                     |        |
|----------------------------|---------------------|--------|
| Alum,                      | 36 cs.              | £32    |
| Alum,                      | 4 t.                | £6     |
| Alum,                      | 5 c.                | £11    |
| Alum,                      | 10 drs.             | £50    |
| Alum,                      | 15 cs.              | £21    |
| Alum Carbonate—            | 10 cks.             | £26    |
| Alum,                      | 2 t. 10 c.          | £68    |
| Alum,                      | 15 cs.              | £24    |
| Alum,                      | 20                  | £38    |
| Alum Chloride—             | 15 c.               | £25    |
| Alum,                      | 4 cks.              | £23    |
| Alum Sulphate—             | 6 t. 19             | £145   |
| Alum,                      | 130 t.              | £1,030 |
| Alum,                      | 40                  | £330   |
| Alum,                      | 150                 | £2,017 |
| Alum,                      | 200                 | £1,660 |
| Alum,                      | 14                  | £126   |
| Alum Ammonia—              | 11 cs.              | £33    |
| Alum,                      | 49 cyldrs.          | £194   |
| Nitrate—                   | 2 t.                | £41    |
| Alum of Lime—              | 18 c.               | £20    |
| Alum,                      | 1 t. 11 c.          | £23    |
| Alum Acid—                 | 10 c.               | £15    |
| Alum Acid—                 | 150 drs.            | £65    |
| Alum,                      | 10 cans             | £15    |
| Alum,                      | 10 cks.             | £68    |
| Alum,                      | 48                  | £159   |
| Alum,                      | 50                  | £13    |
| Alum,                      | 2 cs.               | £11    |
| Alum,                      | 4                   | £46    |
| Alum,                      | 20                  | £18    |
| Bisulphide—                | 25 drs.             | £12    |
| Alum Acid Gas—             | 52 tubes            | £20    |
| Soda—                      | 7 c.                | £9     |
| Alum,                      | 6 t.                | £50    |
| Alum,                      | 8                   | £11    |
| Alum,                      | 16                  | £40    |
| Alum,                      | 4                   | £38    |
| Alum (otherwise undescr'd) | 3 t.                | £200   |
| Alum,                      | 8 pks.              | £40    |
| Alum,                      | 4 cs.               | £11    |
| Alum,                      | 13                  | £58    |
| Alum,                      | 10                  | £47    |
| Alum,                      | 17 t. 2 c.          | £21    |
| Alum,                      | 5                   | £200   |
| Alum,                      | 30 kgs.             | £45    |
| Alum Acid—                 | 5 cks. 10 c. 33 kgs | £413   |
| Alum,                      | 2 t. 3              | £242   |
| Alum,                      | 5                   | £31    |
| Alum,                      | 5                   | £32    |
| Alum,                      | 10                  | £179   |
| Alum,                      | 3                   | £370   |
| Alum,                      | 2                   | £13    |
| Alum,                      | 2 cs.               | £14    |
| Alum,                      | 5                   | £31    |
| Alum,                      | 5                   | £37    |
| Alum Products—             | 50 cs.              | £180   |
| Alum Oil—                  | 13 drs.             | £460   |
| Alum,                      | 95 cks.             | £1,300 |
| Alum,                      | 71                  | £295   |
| Alum,                      | 12 drs.             | £187   |
| Alum,                      | 64 cks.             | £390   |
| Alum,                      | 81,363 galls.       | £510   |
| Alum,                      | 25 brls.            | £75    |
| Alum,                      | 25 cks.             | £75    |
| Alum,                      | 8 drs.              | £10    |

**Naphthaline**

|                         |                     |        |
|-------------------------|---------------------|--------|
| Hamburg,                | 16 pks.             | £54    |
| Rotterdam,              | 24 cks.             | 44     |
| Le Treport,             | 170 bgs.            | 91     |
| Phenyle                 |                     |        |
| Calcutta,               | 500 drs.            | £26    |
| Pitch                   |                     |        |
| Antwerp,                | 820 t.              | £1,581 |
| New York,               | 405 cks. 4,801 bgs. | 1,127  |
| Dunkirk,                | 342 t.              | 518    |
| La Rochelle,            | 875                 | 1,650  |
| Hamburg,                | 14 cks.             | 42     |
| Sydney,                 | 100                 | —      |
| Hochfeld,               | 605 t.              | 1,090  |
| Tar                     |                     |        |
| Batavia,                | 150 brls.           | £77    |
| Samarang,               | 250                 | 128    |
| Sourabaya,              | 100                 | 51     |
| Archangel,              | 10 runts.           | 8      |
| Sydney,                 | 150 drs.            | —      |
| Algoa Bay,              | 225                 | 10     |
| E. London,              | 590                 | 18     |
| Cream of Tartar—        |                     |        |
| Natal,                  | 1 c.                | £11    |
| Fremantle,              | 5                   | 26     |
| Huogo,                  | 10                  | 50     |
| Hobart,                 | 13                  | 19     |
| Yokohama,               | 10                  | 51     |
| Launceston,             | 15                  | 71     |
| Wellington,             | 6                   | 25     |
| Cape Town,              | 8                   | 38     |
| Brisbane,               | 20 kgs.             | 98     |
| Invercargill,           | 3                   | 16     |
| Disinfectants—          |                     |        |
| Paris,                  | 15 cks.             | £31    |
| New York,               | qty.                | —      |
| Hong Kong,              | 100 drs.            | 20     |
| Adelaide,               | 6 cs.               | 12     |
| Melbourne,              | 12                  | 15     |
| Wellington,             | 3 c.                | 20     |
| Otago,                  | 20                  | 42     |
| Sydney,                 | 63 pks. 60          | 158    |
| Antigua,                | 5 t. 12             | 2      |
| Hamburg,                | 10                  | 10     |
| Algoa Bay,              | 10                  | 46     |
| Hydrochloric Acid—      |                     |        |
| E. London,              | 20 cs.              | £13    |
| Hydrofluoric Acid—      |                     |        |
| E. London,              | 4 cs.               | £20    |
| Manure—                 |                     |        |
| Algoa Bay,              | 8 t.                | £65    |
| Hobart,                 | 4                   | 36     |
| Fremantle,              | 20                  | 8 c.   |
| Salobrena,              | 415                 | 3,735  |
| Barbadoes,              | 111                 | 848    |
| Martinique,             | 75                  | 292    |
| Invercargill,           | 46                  | 590    |
| Berice,                 | 25                  | 225    |
| Sydney,                 | 1                   | 13     |
| Almunecar (Sp.),        | 36                  | 324    |
| Nitric Acid—            |                     |        |
| Shanghai,               | 8 cs.               | £14    |
| E. London,              | 10                  | 13     |
| Phosphorus—             |                     |        |
| Hobart,                 | 5 cs.               | £46    |
| Otago,                  | 10                  | 96     |
| Potash Crystals—        |                     |        |
| Brussels,               | 5 cs.               | £70    |
| Potassium Arsenate—     |                     |        |
| Corinto,                | 6 c.                | £17    |
| Potassium Cyanide—      |                     |        |
| Shanghai,               | 2 t. 12 c.          | £13    |
| Adelaide,               | 4                   | 248    |
| Brisbane,               | 4                   | 400    |
| Madras,                 | 2                   | 12     |
| Salicylic Acid—         |                     |        |
| Cape Town,              | 2 cs.               | £67    |
| Saltpetre—              |                     |        |
| Santos,                 | 6 t. 11 c.          | £157   |
| B. Ayres,               | 1                   | 28     |
| Salts of Soda and Lime— |                     |        |
| Brussels,               | 2 cs.               | £15    |
| Sheep Dip—              |                     |        |
| Algoa Bay,              | 100 brls.           | £60    |
| Adelaide,               | 2 t. 19 c.          | 101    |
| Calcutta,               | 62 pks.             | 42     |
| Launceston,             | 40                  | 38     |
| Beira,                  | 5                   | 12     |
| M. Video,               | 20                  | 14     |
| B. Ayres,               | 25                  | 570    |
| Natal,                  | 1                   | 25     |
| Sydney,                 | 30                  | 27     |
| Soda Crystals—          |                     |        |
| Fremantle,              | 3 t. 17 c.          | £69    |
| Cape Town,              | 2                   | 5      |
| Sodium Bicarbonate—     |                     |        |
| Mossel Bay,             | 1 t.                | £7     |
| Gibraltar,              | 10 c.               | 6      |

**Sodium Sulphate—**

|                    |              |      |
|--------------------|--------------|------|
| Kristinehamn,      | 150 t. 13 c. | £221 |
| Strontium Nitrate— |              |      |
| Bombay,            | 1 t. 7 c.    | £41  |
| New York,          | 5            | 109  |
| Sulphur—           |              |      |
| E. London,         | 450 kgs.     | £168 |
| Lisbon,            | 250 brls.    | 174  |
| Cape Town,         | 200          | 184  |
| Algoa Bay,         | 230          | 150  |
| Sulphuric Acid—    |              |      |
| Natal,             | 13 t. 4 c.   | £118 |
| E. London,         | 50 cs.       | 36   |
| Superphosphates—   |              |      |
| Lyttelton,         | 300 t.       | £795 |
| Tartaric Acid—     |              |      |
| Fremantle,         | 5 c.         | £34  |
| Huogo,             | 10           | 68   |
| Yokohama,          | 3            | 18   |
| Lisbon,            | 10           | 64   |
| Calcutta,          | 2 cs.        | 15   |
| Sydney,            | 23 kgs.      | 124  |
| Wellington,        | 4            | 14   |
| Melbourne,         | 1 ck.        | 32   |

**LIVERPOOL.**

Week ending June 17th.

|                     |                 |        |
|---------------------|-----------------|--------|
| Alum—               |                 |        |
| Callao,             | 17 c. 3 q.      | £5     |
| Smyrna,             | 3 t. 13         | 17     |
| Gibraltar,          | 1               | 6      |
| Constantinople,     | 1               | 5      |
| San Francisco,      | 20              | 89     |
| Piraeus,            | 2               | 10     |
| Genoa,              | 2               | 10     |
| Aluminous Cake—     |                 |        |
| Odessa,             | 2 t. 11 c. 3 q. | £9     |
| Bombay,             | 1               | 6      |
| Ammonia (Liquid)—   |                 |        |
| Cadiz,              | 1 t.            | £17    |
| Ammonium Carbonate— |                 |        |
| Venice,             | 5 c.            | £8     |
| Rangoon,            | 14              | 21     |
| Genoa,              | 1 t. 5          | 44     |
| Ammonium Chloride—  |                 |        |
| Tampico,            | 18 c.           | £33    |
| Volo,               | 10              | 18     |
| Antwerp,            | 1 t.            | 41     |
| Trieste,            | 1               | 19     |
| Philadelphia,       | 4               | 146    |
| Leghorn,            | 2 brls.         | 6      |
| Naples,             | 2               | 6      |
| Hamburg,            | 2               | 89     |
| Stettin,            | 15              | 26     |
| Amsterdam,          | 6               | 8      |
| Beyrout,            | 10              | 19     |
| Rio de Janeiro,     | 1               | 33     |
| Ammonium Sulphate—  |                 |        |
| Stettin,            | 30 t. 10 c.     | £305   |
| Samarang,           | 122             | 989    |
| Madaira,            | 1               | 8      |
| Demerara,           | 50              | 415    |
| Antigua,            | 65              | 530    |
| Las Palmas,         | 16              | 131    |
| Valencia,           | 112             | 896    |
| Leghorn,            | 9               | 85     |
| Bleaching Powder—   |                 |        |
| Baltimore,          | 257 cks.        | —      |
| Boston,             | 500             | 60 cs. |
| Calcutta,           |                 |        |
| Genoa,              | 139             |        |
| Leghorn,            | 65              |        |
| Maranham,           | 10 brls.        |        |
| Nantes,             | 45              |        |
| Naples,             | 10              |        |
| New York,           | 76              | 124    |
| Norrkoping,         | 134             |        |
| Odessa,             | 16              |        |
| Paris,              | 28              |        |
| Philadelphia,       | 81              |        |
| Rouen,              | 94              |        |
| St. John's, Nfld.,  |                 | 2      |
| Stockholm,          | 11              |        |
| Alexandria,         | 12 c.           | £17    |
| Boracic Acid—       |                 |        |
| Santander,          | 1 t.            | £30    |
| Rotterdam,          | 1               | 30     |
| Borax—              |                 |        |
| Geffe,              | 10 c.           | £11    |
| Antwerp,            | 3 t. 3          | 60     |
| Hamburg,            | 23              | 473    |
| Bilbao,             | 21              | 360    |
| Rotterdam,          | 13              | 292    |
| Amsterdam,          | 10              | 11     |
| Carbolic Acid—      |                 |        |
| Barcelona,          | 7 c.            | £21    |

|                                 |                  |      |       |
|---------------------------------|------------------|------|-------|
| Calcutta,                       | 3                | 1 q. | 10    |
| Genoa,                          | 19               | 3    | 62    |
| Baltimore,                      | 9 cs.            |      | 25    |
| Philadelphia,                   | 14               |      | 69    |
| Hamburg,                        | 1 t. 9           |      | 89    |
| Montreal,                       | 1                |      | 6     |
| Kobe,                           | 1                | 5    | 88    |
| Rotterdam,                      | 16               |      | 876   |
| Caustic Potash—                 |                  |      |       |
| Montreal,                       | 6 t. 1 c.        |      | £170  |
| Caustic Soda—                   |                  |      |       |
| Arcaju,                         | 160 dms.         |      |       |
| Barcelona,                      | 110 cks. 37 pks. |      |       |
| Bordeaux,                       | 17               |      |       |
| Boston,                         | 50               |      |       |
| Galatz,                         | 35               |      |       |
| Genoa,                          | 214              |      |       |
| Havana,                         | 65               |      |       |
| Ibrail,                         | 70               |      |       |
| Konigsberg,                     | 35               |      |       |
| La Guayra,                      | 12               |      |       |
| Leghorn,                        | 30               |      |       |
| Lyttelton,                      | 10               |      |       |
| Maranham,                       | 5                |      |       |
| Melbourne,                      | 15               |      |       |
| Montreal,                       | 179              |      |       |
| New York,                       | 200              |      |       |
| Odessa,                         | 448              |      |       |
| Oporto,                         | 15               |      |       |
| Paris,                          | 92               |      |       |
| Philadelphia,                   | 50               |      |       |
| Quebec,                         | 30               |      |       |
| Rio Grande Do Sul,              | 100              |      |       |
| Rotterdam,                      | 55               |      |       |
| Smyrna,                         | 10 brls.         |      |       |
| Sydney,                         | 35               |      |       |
| Tampico,                        | 60               |      |       |
| Valparaiso,                     | 35               |      |       |
| Vancouver,                      | 30               |      |       |
| Yokohama,                       | 80               |      |       |
| Chemicals (otherwise undescr'd) |                  |      |       |
| Leghorn,                        | 16 c.            |      | £27   |
| Antwerp,                        | 8                |      | 11    |
| Barcelona,                      | 1 t.             |      | 37    |
| Volo,                           | 5                | 1 q. | 9     |
| Palermo,                        | 5                |      | 9     |
| Marseilles,                     | 8                |      | 14    |
| Genoa,                          | 2                | 10   | 87    |
| Naples,                         | 10               |      | 17    |
| Boston,                         | 14               | 7    | 2     |
| Odessa,                         | 2                |      | 58    |
| Samsoun,                        | 8                |      | 14    |
| Philadelphia,                   | 27               |      | 890   |
| Georgetown,                     | 1                |      | 5     |
| New York,                       | 6                | 14   | 265   |
| China Clay—                     |                  |      |       |
| Barcelona,                      | 176 bxs.         |      |       |
| Boston,                         | 1,366 1/4 t.     |      |       |
| Calcutta,                       | 239 cks.         |      |       |
| Maranham,                       | 1 t. 15 c.       |      |       |
| Oporto,                         | 20               |      |       |
| Philadelphia,                   | 60               |      |       |
| Rio de Janeiro,                 | 15               | 16   |       |
| Citric Acid—                    |                  |      |       |
| Vera Cruz,                      | 3 c. 1 q.        |      | £24   |
| Santiago de Cuba,               | 2                | 1    | 16    |
| Coal Products—                  |                  |      |       |
| Aniline Colours                 |                  |      |       |
| Barcelona,                      | 5 cks.           |      |       |
| New York,                       | 13               |      |       |
| Philadelphia,                   | 5                |      |       |
| Shanghai,                       | 50 cs.           |      |       |
| Aniline Oil                     |                  |      |       |
| Barcelona,                      | 22 cks.          |      |       |
| Aniline Salt                    |                  |      |       |
| Bombay,                         | 1 ck.            |      |       |
| Boston,                         | 1 t. 20 cs.      |      |       |
| New York,                       | 10               |      |       |
| Anthracene                      |                  |      |       |
| Rotterdam,                      | 23 brls.         |      |       |
| Binitro Toluol                  |                  |      |       |
| New York,                       | 12 cks.          |      |       |
| Creosote Oil                    |                  |      |       |
| Lisbon,                         | 125 brls.        |      |       |
| Pitch                           |                  |      |       |
| Mauritius,                      | 5 brls.          |      |       |
| Rouen,                          | 2 t. 14 c.       |      |       |
| Tar                             |                  |      |       |
| Mauritius,                      | 15 dms. 5 mlts.  |      |       |
| Noqui,                          | 12 brls.         |      |       |
| Sierra Leone,                   | 1 t. 4 c.        |      |       |
| Cobalt Oxide—                   |                  |      |       |
| New York,                       | 4 c. 2 q.        |      | £139  |
| Antwerp,                        | 1                |      | 25    |
| Copper Sulphate—                |                  |      |       |
| Constantinople,                 | 9 c. 3 q.        |      | £10   |
| Ibrail,                         | 6 t.             |      | 119   |
| Rouen,                          | 105              | 1    | 1,891 |
| Algiers,                        | 1                | 13   | 106   |



|                              |                              |                             |                             |
|------------------------------|------------------------------|-----------------------------|-----------------------------|
| Charente, 23 14 423          | Marseilles, 1 t. 6 1 q. 150  | Curacao, 612                | Leghorn, 45 10 brls.        |
| Naples, 4 6 1 73             | Corinto, 2 2 270             | Demerara, 2,278             | Lisbon, 40                  |
| Genoa, 105 3 1,808           | <b>Potassium Bichromate—</b> | E. London, 2,279            | Madras, 50                  |
| Nantes, 74 15 1 999          | Santander, 8 c. 46           | Gaboon, 40                  | Marseilles, 85              |
| Leghorn, 60 1 1,030          | Beira, 13 3 q. 25            | Genoa, 27                   | Melbourne, 284              |
| Venice, 17 9 1 287           | Rouen, 1 t. 43               | Gibraltar, 100 20           | Nantes, 35 6 cks            |
| Bordeaux, 525 9 1 11,992     | <b>Potassium Bisulphite—</b> | Hamburg, 32                 | Newcastle, 190              |
| Paris, 7 10 118              | Oporto, 10 c. 435            | Hong Kong, 491              | N.S.W., 190                 |
| Marseilles, 29 10 470        | <b>Potassium Carbonate—</b>  | Jersey, 200 7 cbs.          | New Fairwater, 200          |
| <b>Copperas—</b>             | Montreal, 1 t. 9 c. 428      | Kurrachee, 25 14            | Paris, 175                  |
| Casablanca, 4 t. 12 c. 411   | New York, 10 17 194          | Lagos, 32                   | Philadelphia, 67            |
| San Francisco, 27 60         | <b>Potassium Chlorate—</b>   | Limassol, 10 8              | Rotterdam, 85 18 brls.      |
| Melbourne, 5 11              | Copenhagen, 2 t. 10 c. 409   | Mauritius, 1,365            | Shanghai, 500               |
| Aleppo, 3 6                  | Gothenburg, 3 128            | Montreal, 825               | Sherbrooke, 110             |
| Santos, 5 12                 | Santos, 3 12                 | Montserrat, 20              | Singapore, 4 cks.           |
| <b>Disinfectants—</b>        | Oporto, 6 12                 | New York, 450               | Smyrna, 100                 |
| Alexandria, 7 cs. 413        | New York, 11 5 450           | Pt. Elizabeth, 60 23        | Sydney, 287                 |
| Bombay, 11 7                 | Hiogo, 8 15 241              | Pt. Natal, 175 14           | Trinidad, 100               |
| Calcutta, 1 t. 2 c. 7        | Naples, 1 15 68              | Rotterdam, 100 380          | Veile, 30 2                 |
| <b>Hydrofluoric Acid—</b>    | Sydney, 4 156                | St. John's, Nfld., 110      | Wellington, 50              |
| Hamburg, 1 ck. 1 cs. 433     | Hong Kong, 1 10 60           | St. Lucia, 125              | Yokohama, 2,000             |
| <b>Insecticide—</b>          | <b>Potassium Chloride—</b>   | Salonica, 20                | <b>Sodium Bichromate—</b>   |
| Colombo, 10 c. 413           | Cartagena, N.G., 10 cs. 470  | Santa Marta, 4              | Rouen, 12 cks.              |
| Philadelphia, 3 t. 10 200    | <b>Potassium Prussiate—</b>  | Savanna, 3                  | <b>Sodium Carbonate—</b>    |
| <b>Iron Oxide—</b>           | Genoa, 12 c. 449             | Shanghai, 9 420             | Boston, 56 brls.            |
| Toronto, 1 t. 12 c. 410      | <b>Salt—</b>                 | Sierra Leone, 106           | <b>Sodium Chlorate—</b>     |
| <b>Lime—</b>                 | Algoa Bay, 18 t. 120         | Singapore, 2,460 50         | Vera Cruz, 8 cks.           |
| Sierra Leone, 9 t. 15 c. 420 | Amsterdam, 100               | Smyrna, 20                  | <b>Sodium Hyposulphite—</b> |
| Lagos, 25 20                 | Antwerp, 127                 | Teneriffe, 448              | Callao, 20 kgs.             |
| Demerara, 13 6 25            | Baltimore, 330               | Trinidad, 1,900             | <b>Sodium Silicate—</b>     |
| Gaboon, 5 25                 | Barbadoes, 50                | Victoria, B.C., 40          | Cartagena, Sp., 10 brls.    |
| <b>Magnesium Carbonate—</b>  | Bata, 11                     | <b>Soda Alkali—</b>         | Kurrachee, 7 cks.           |
| Tampico, 5 c. 2 q. 413       | Belize, 10                   | Genoa, 35 brls.             | <b>Sodium Sulphate—</b>     |
| <b>Magnesium Sulphate</b>    | Benin, 8                     | New York, 35                | Montreal, 31 cks.           |
| Lisbon, 4 cks.               | Boma, 4 c.                   | Sydney, 40                  | <b>Starch—</b>              |
| <b>Manure—</b>               | Boston, 380                  | <b>Soda Ash—</b>            | Genoa, 10 bgs.              |
| New York, 17 c. 410          | B. Ayres, 70 1               | Adelaide, 313 cks.          | <b>Sulphur—</b>             |
| <b>Oxalic Acid—</b>          | Calcutta, 2,588              | Amsterdam, 250 bgs.         | Boston, 300 t. 6 c.         |
| Boston, 11 t. 6 c. 4310      | Cameroons, 162 2             | Antwerp, 50                 | <b>Sulphuric Acid—</b>      |
| <b>Pail t—</b>               | Cape Lopez, 11               | Baltimore, 2,603            | Manaos, 30 c.               |
| Algoa Bay, 1 ck.             | Cape Town, 18                | Bari, 500                   | New York, 2 t. 3            |
| Barbadoes, 17 30 kgs.        | Demerara, 18                 | Bombay, 27                  | <b>Superphosphates—</b>     |
| Barcelona, 17 45             | Dunedin, 90                  | Boston, 42 35 tcs. 400      | Las Palmas, 3 t.            |
| Belize, 62                   | E. London, 9                 | Brisbane, 173               | <b>Yarnish—</b>             |
| Beyrout, 5 20 cs.            | Fuca, 20                     | Calcutta, 298               | Alexandria, 2 cs.           |
| Callao, 5 160                | Ghent, 150                   | Genoa, 310                  | Algoa Bay, 17               |
| Casablanca, 26 10 dms.       | Hammerfest, 500              | Ghent, 120                  | Calcutta, 20 cks.           |
| Colombo, 760                 | Iceland, 184                 | Hamburg, 31                 | Colon, 2                    |
| Constantinople, 24           | Isafjord, 156                | Hiogo, 433                  | E. London, 2                |
| Corinto, 30                  | Lagos, 147                   | Lagos, 50 brls.             | Leghorn, 2 8                |
| Curacao, 30                  | Landana, 18 5                | Maranham, 50 40             | Naples, 2                   |
| E. London, 1 brl. 47         | Loango, 18                   | Melbourne, 243              | Valparaiso, 2               |
| Gaboon, 2 16                 | Manila, 71 9                 | New York, 43 1,500          | <b>White Lead—</b>          |
| Gijon, 16                    | Maranham, 71 9               | Philadelphia, 155 tcs.      | Colon, 20 kgs.              |
| Gothenburg, 75 bgs.          | Matadi, 55 14                | Rio de Janeiro, 20          | <b>Zinc Chloride—</b>       |
| Gd. Canary, 25 24 dms.       | Miranichi, 300               | Rio Grande, 152             | Bombay, 4 t.                |
| Halifax, 23                  | Melbourne, 170               | Do Sul, 140                 | Montreal, 1                 |
| Havana, 2 cs. 248            | Montreal, 1,622 14           | Rotterdam, 12               | Calcutta, 10 c.             |
| Ilo Ilo, 1 248               | Noqui, 72                    | Samarang, 6                 |                             |
| Leghorn, 30 18               | Para, 387                    | San Francisco, 194          |                             |
| Lisbon, 29                   | Philadelphia, 400            | Sherbrooke, 300             |                             |
| Madras, 29 240               | Pt. Natal, 100               | Smyrna, 414                 |                             |
| Malta, 7                     | Quebec, 550                  | Sydney, 339                 |                             |
| Manaos, 8 brls. 150          | Rio Del Rey, 36              | Talcahuano, 100             |                             |
| Manila, 3 600 1 cs.          | Rotterdam, 120               | Vancouver, 19               |                             |
| Maracaibo, 17 3              | Salt Pond, 25                | Yokohama, 117               |                             |
| Maranham, 17 3               | Shanghai, 15                 | <b>Soda Crystals—</b>       |                             |
| Mauritius, 2 600             | Sierra Leone, 190 4          | Barcelona, 50 bgs.          |                             |
| Montreal, 2 13               | Sydney, 160                  | Boston, 420 brls.           |                             |
| Mossamedes, 12 13            | Trinidad, 36                 | Calcutta, 33 kgs.           |                             |
| Port Natal, 24               | Victoria, 10 14              | Constantinople, 15          |                             |
| St. John's, Nfld., 24        | Wellington, 100              | Halifax, 50                 |                             |
| Salonica, 3 brls             | Yokohama, 8 18               | M. Video, 30 cks.           |                             |
| San Juan, 80                 | <b>Salt Cake—</b>            | Philadelphia, 140           |                             |
| Savanna, 2                   | Baltimore, 140 t. 7 c. 4195  | Rotterdam, 20               |                             |
| Shanghai, 150                | Gijon, 56 1 114              | Samarang, 10                |                             |
| Valparaiso, 11               | <b>Saltpetre—</b>            | Santos, 23 brls.            |                             |
| <b>Painters Colours—</b>     | Vancouver, 10 c. 412         | Sherbrooke, 15              |                             |
| Alexandria, 80 brls.         | Wellington, N.Z., 15         | Singapore, 34               |                             |
| Benguela, 2 cks. 3 cs.       | Maranham, 5 kgs. 6           | <b>Sodium Arseniate—</b>    |                             |
| Calcutta, 4                  | Maceio, 1 t. 23              | Rouen, 4 cks.               |                             |
| Lisbon, 5 pks.               | <b>Sheep Dip—</b>            | <b>Sodium Bicarbonate—</b>  |                             |
| Marseilles, 23               | Cape Town, 14 c. 1 q. 431    | Aalborg, 4 cks.             |                             |
| Newport News, 210 10 kgs.    | B. Ayres, 18 t. 10 2 570     | Adelaide, 100 kgs. 100 bgs. |                             |
| New York, 202 brls.          | Montreal, 9 5 45             | Algoa Bay, 20               |                             |
| Para, 13 tcs. 14 cs.         | Rangoon, 16 1 19             | Antwerp, 60                 |                             |
| Pt. Elizabeth, 28            | Auckland, N.Z., 10 7         | Baltimore, 100              |                             |
| Rotterdam, 100 bgs. 2        | <b>Soap—</b>                 | Barcelona, 295 13           |                             |
| Salonica, 2 brls.            | Alexandria, 21 cs.           | Bombay, 125 18              |                             |
| San Jose de Guatemala, 4     | Algoa Bay, 2,272 bxs. 615    | Boston, 250                 |                             |
| Santos, 2 4                  | Amsterdam, 1                 | Bourgas, 45                 |                             |
| Stockholm, 6 6 kgs.          | Barbadoes, 350 1             | Brisbane, 375               |                             |
| <b>Paraffin Wax—</b>         | Belize, 845                  | B. Ayres, 154 9             |                             |
| Bordeaux, 45 cs.             | Bombay, 70 35                | Cartagena, Sp., 65          |                             |
| Pernambuco, 10               | Boston, 2 42 brls.           | Dunedin, 80 9               |                             |
| <b>Phosphates—</b>           | B. Ayres, 10 40              | Genoa, 50                   |                             |
| Las Palmas, 2 t. 46          | Cameroons, 100 29            | Hamburg, 50                 |                             |
| <b>Pluric Acid—</b>          | C. C. Castle, 1,000          | Havre, 10                   |                             |
| New York, 18 c. 485          | Cartagena, 2                 | Hong Kong, 10               |                             |
| <b>Potash Salts—</b>         | Constantinople, 20 1         |                             |                             |
| Genoa, 12 c. 440             | Copenhagen, 40               |                             |                             |

## MANCHESTER

Week ending June 17th.

|                                               |                          |
|-----------------------------------------------|--------------------------|
| <b>Alum—</b>                                  | Sfax, 5 hf. tcs.         |
| <b>Aluminium—</b>                             | Ghent, 1 t. 2 c.         |
| <b>Ammonium Chloride—</b>                     | Beyrout, 1 brl.          |
| <b>Aniline Colours—</b>                       | Hamburg, 7 cks. 1 cs.    |
|                                               | Rotterdam, 2 6 kgs       |
| <b>Aniline Oil—</b>                           | Rotterdam, 11 tins 4 dms |
| <b>Aniline Salt—</b>                          | Rotterdam, 5 pns.        |
| <b>Carbolic Acid—</b>                         | Treport, 86 brls.        |
| <b>Chemicals (otherwise unclassified)</b>     | Alexandria, 8 cks.       |
| <b>Coal Products (otherwise unclassified)</b> | Antwerp, 2 dms.          |
| <b>Copper Sulphate—</b>                       | Beyrout, 1 brl.          |
| <b>Cottonseed Oil—</b>                        | Tunis, 60 brls.          |
| <b>Creosote Salt—</b>                         | Treport, 87 cks.         |
| <b>Extracts—</b>                              | Treport, 8 cks.          |
| <b>Glue—</b>                                  | Antwerp, 6 cks.          |
|                                               | Rotterdam, 3             |
| <b>Oxygen—</b>                                | Treport, 82 tubes        |
| <b>Pitch—</b>                                 | Cette, 1,027 t. 2 c.     |
| <b>Salt—</b>                                  | Rotterdam, 200 t.        |



|                         |  |
|-------------------------|--|
| 12 cs.                  |  |
| licate—                 |  |
| 10 brls.                |  |
| 11 dms.                 |  |
| 15 cks.                 |  |
| 24 cks.                 |  |
| <b>HULL.</b>            |  |
| ending June 13th.       |  |
| 292 cks.                |  |
| m Sulphate—             |  |
| 912 bgs.                |  |
| 1 ble.                  |  |
| 73 cks.                 |  |
| Powder—                 |  |
| 60 cks.                 |  |
| 44                      |  |
| 2 kgs.                  |  |
| oda—                    |  |
| 1 ck.                   |  |
| 2                       |  |
| (otherwise undescribed) |  |
| 1 ck.                   |  |
| 19 32 cs.               |  |
| 20 pks.                 |  |
| 20                      |  |
| 722 slbs.               |  |
| 5                       |  |
| 18 pks.                 |  |
| 42 10                   |  |
| 9                       |  |
| 24 90                   |  |
| 25 4                    |  |
| 14                      |  |
| d Oil—                  |  |
| 700 c.                  |  |
| 673                     |  |
| 300                     |  |
| 42                      |  |
| 138                     |  |
| and, 69                 |  |
| 34                      |  |
| 50                      |  |
| 100                     |  |
| 1,241                   |  |
| 1,124                   |  |
| 700                     |  |
| 112                     |  |
| 17                      |  |
| (otherwise undescribed) |  |
| 30 pks.                 |  |
| 6 cks.                  |  |
| 4                       |  |
| 56 cks.                 |  |
| Oil—                    |  |
| 104 c.                  |  |
| 95                      |  |
| 577                     |  |
| 1,011                   |  |
| 28                      |  |
| 191                     |  |
| 8                       |  |
| 476                     |  |
| 24                      |  |
| 314                     |  |
| 28 bgs.                 |  |
| <b>Colours—</b>         |  |
| 4 dms.                  |  |
| 45 cks. 2 cs.           |  |
| 34                      |  |
| 200 dms.                |  |
| 41 cs. 985 pks.         |  |
| 24 dms.                 |  |
| 11                      |  |
| 38                      |  |
| 10 dms.                 |  |
| 5 1 cs.                 |  |
| 20 20                   |  |
| 7 2 dms. 13             |  |
| 1 cs.                   |  |
| 14 19 dms.              |  |
| 45                      |  |
| <b>Wax—</b>             |  |
| 5 bgs.                  |  |

|                                |  |
|--------------------------------|--|
| <b>Pitch—</b>                  |  |
| Abo, 11 cks.                   |  |
| Antwerp, 200 L.                |  |
| Drontheim, 25 kgs.             |  |
| Dunkirk, 85                    |  |
| Odessa, 100 cks.               |  |
| <b>Stearine—</b>               |  |
| Wasa, 3 cks.                   |  |
| <b>Tallow—</b>                 |  |
| Dunkirk, 40 cks.               |  |
| Libau, 66                      |  |
| Stockholm, 1                   |  |
| Wasa, 223                      |  |
| <b>Tar—</b>                    |  |
| Abo, 50 cks.                   |  |
| Antwerp, 6                     |  |
| Amsterdam, 6                   |  |
| Copenhagen, 14                 |  |
| Gothenburg, 5                  |  |
| Hamburg, 9                     |  |
| Rotterdam, 19                  |  |
| Stettin, 5                     |  |
| Wasa, 75                       |  |
| <b>Toluol—</b>                 |  |
| Amsterdam, 83 cks.             |  |
| <b>Varnish—</b>                |  |
| Antwerp, 17 cks. 4 cs. 28 dms. |  |
| Amsterdam, 2                   |  |
| Gothenburg, 1                  |  |
| Ghent, 1                       |  |
| Hamburg, 2                     |  |
| St. Petersburg, 1              |  |
| <b>Whiting—</b>                |  |
| Bombay, 13 cks.                |  |

**GLASGOW.**

Week ending June 18th.

|                                         |  |
|-----------------------------------------|--|
| <b>Albumen—</b>                         |  |
| U.S.A., £179                            |  |
| <b>Alkali—</b>                          |  |
| Iloilo, 5 t. 16½ c.                     |  |
| <b>Ammonium Sulphate—</b>               |  |
| Antigua, 23 t. 3½ c.                    |  |
| <b>Asbestos—</b>                        |  |
| B. Ayres, £26                           |  |
| <b>Benzine—</b>                         |  |
| France, £75                             |  |
| <b>Bleaching Powder—</b>                |  |
| Calcutta, 82 t. 13 c.                   |  |
| Sydney, N.S.W., 20 4½                   |  |
| U.S.A., 7 8                             |  |
| <b>Coal Products—</b>                   |  |
| Creosote, £1,400                        |  |
| France, 5 t. 8 c.                       |  |
| <b>Creosote Oil</b>                     |  |
| Hamburg, £55                            |  |
| <b>Pitch</b>                            |  |
| U.S.A., 70                              |  |
| Canada, £225                            |  |
| <b>Tar</b>                              |  |
| Calcutta, 22                            |  |
| Russia, 114                             |  |
| Christiania, 90                         |  |
| Singapore, 23                           |  |
| Straits Settlements, £35                |  |
| Iloilo, £135                            |  |
| <b>Tar Acids</b>                        |  |
| U.S.A., £730                            |  |
| <b>Coal Products (otherwise undes.)</b> |  |
| Rotterdam, £22                          |  |
| <b>Cod Oil—</b>                         |  |
| Sydney, N.S.W., £124                    |  |
| <b>Cottonseed Oil—</b>                  |  |
| Manila, 250 glns.                       |  |
| Philippine Isls., 1250                  |  |
| <b>Dyestuffs (otherwise undes.)</b>     |  |
| Montreal, £124                          |  |
| <b>Iodine—</b>                          |  |
| Rotterdam, £945                         |  |
| <b>Linseed Oil—</b>                     |  |
| Colombo, 1 t. 14½ c.                    |  |
| Sydney, N.S.W., 9 2½                    |  |
| Singapore, 3 13                         |  |
| Egypt, 2                                |  |
| Cape Town, 1 ¼                          |  |
| Manila, 250 glns.                       |  |
| Mauritius, 2 t. 8                       |  |
| <b>Logwood—</b>                         |  |
| Oporto, £35                             |  |
| <b>Magnesium Silicate—</b>              |  |
| Saigon, £32                             |  |
| <b>Magnesium Sulphate—</b>              |  |
| Sydney, £22                             |  |
| Christiania, 41                         |  |
| <b>Manganese—</b>                       |  |
| Rotterdam, 1 t. 14 c.                   |  |
| <b>Ochre—</b>                           |  |
| Calcutta, £45                           |  |

|                              |  |
|------------------------------|--|
| <b>Paint—</b>                |  |
| Newcastle, N.S.W., £48       |  |
| U.S.A., 20                   |  |
| Manila, 85                   |  |
| <b>Painters' Colours—</b>    |  |
| Shanghai, £53                |  |
| Singapore, 245               |  |
| Sydney, 410                  |  |
| U.S.A., 35                   |  |
| Antwerp, 20                  |  |
| Algoa Bay, 41                |  |
| B. Ayres, 389                |  |
| Cape Town, 113               |  |
| Montreal, 230                |  |
| Oporto, 160                  |  |
| <b>Paraffin Wax—</b>         |  |
| Turkey, £20                  |  |
| Rouen, 32                    |  |
| <b>Potash Salts—</b>         |  |
| Canada, 13½ c.               |  |
| <b>Potassium Bichromate—</b> |  |
| Canada, 12 t. 12½ c.         |  |
| Amsterdam, qty. £—           |  |
| Antwerp, 198                 |  |
| Canada, 199                  |  |
| <b>Salts of Potash—</b>      |  |
| Mexico City, £350            |  |
| <b>Sheep Dip—</b>            |  |
| B. Ayres, £141               |  |
| <b>Soap—</b>                 |  |
| R. Ayres, 2 t. 7 c.          |  |
| Mauritius, 6 18½             |  |
| <b>Sodium Bichromate—</b>    |  |
| Canada, 2 t. 3½ c.           |  |
| Rouen, £163                  |  |
| U.S.A., 1,037                |  |
| Antwerp, 397                 |  |
| Canada, 80                   |  |
| Ghent, 105                   |  |
| 387                          |  |
| <b>Sulphuric Acid—</b>       |  |
| Penang, £25                  |  |
| Philippine Isls., 37         |  |
| <b>Tallow—</b>               |  |
| Rotterdam, 7 t. 16 c.        |  |
| <b>Treacle—</b>              |  |
| Christiania, 24 t. 19 c.     |  |
| Stockholm, 14 4½             |  |
| E. London, 3 15              |  |
| Pretoria, 1 10               |  |

**TYNE.**

Week ending June 13th.

|                           |  |
|---------------------------|--|
| <b>Alkali—</b>            |  |
| Riga, 67 t. 16 c.         |  |
| Copenhagen, 1 14          |  |
| Rotterdam, 7 15           |  |
| Trieste, 3 6              |  |
| Amsterdam, 14 12          |  |
| Christiania, 6 12         |  |
| <b>Alum—</b>              |  |
| Seville, 2 t. 3 c.        |  |
| <b>Ammonium Chloride—</b> |  |
| Seville, 12 c.            |  |
| <b>Ammonium Sulphate—</b> |  |
| Valencia, 100 t. 2 c.     |  |
| <b>Antimony—</b>          |  |
| Rotterdam, 9 t. 10 c.     |  |
| Hamburg, 1                |  |
| <b>Barium—</b>            |  |
| Rouen, 10 t. 1 c.         |  |
| <b>Barium Carbonate—</b>  |  |
| Rouen, 25 t.              |  |
| Rotterdam, 100            |  |
| Antwerp, 20 14 c.         |  |
| Hamburg, 156              |  |
| <b>Bleaching Powder—</b>  |  |
| Riga, 17 t. 8 c.          |  |
| Rotterdam, 10 11          |  |
| Trieste, 2                |  |
| Aalborg, 2 6              |  |
| Amsterdam, 19 3           |  |
| Venice, 25 cks.           |  |
| Gothenburg, 61 t. 1       |  |
| Trondhjem, 10 1           |  |
| Lisbon, 10 2              |  |
| Antwerp, 79               |  |
| Hamburg, 25 1             |  |
| Christiania, 41           |  |
| Aarhus, 3 16              |  |
| <b>Caustic Soda—</b>      |  |
| Bilbao, 15 t. 1 c.        |  |
| Montreal, 2 18            |  |
| Copenhagen, 4 3           |  |
| Rotterdam, 20 7           |  |
| Venice, 6 6               |  |
| Seville, 191 15           |  |
| Valencia, 52 10           |  |
| Antwerp, 4 18             |  |

|                            |  |
|----------------------------|--|
| Hamburg, 4 18              |  |
| Christiania, 3 8           |  |
| Stavanger, 1 9             |  |
| Constantinople, 6 1        |  |
| <b>Linseed Oil—</b>        |  |
| Montreal, 4 17 c.          |  |
| <b>Litharge—</b>           |  |
| Riga, 1 c.                 |  |
| Amsterdam, 1 1 c.          |  |
| Seville, 11                |  |
| <b>Magnesia—</b>           |  |
| Libau, 3 c.                |  |
| Rotterdam, 8               |  |
| Odense, 8                  |  |
| Amsterdam, 6               |  |
| Antwerp, 2                 |  |
| Hamburg, 14                |  |
| Rouen, 4                   |  |
| Odessa, 10                 |  |
| Montreal, 13               |  |
| <b>Magnesium Sulphate—</b> |  |
| Batoum, 4 t. 14 c.         |  |
| <b>Manure—</b>             |  |
| La Pallice, 1,080 t.       |  |
| <b>Ochre—</b>              |  |
| Trondhjem, 19 c.           |  |
| <b>Paint—</b>              |  |
| Rouen, 18 c.               |  |
| Rotterdam, 15              |  |
| Trieste, 5 t. 10           |  |
| Archangel, 1               |  |
| Hamburg, 1 10              |  |
| <b>Soda—</b>               |  |
| Groto, 1 t.                |  |
| Rotterdam, 10              |  |
| Trondhjem, 4 18 c.         |  |
| Archangel, 13              |  |
| Christiania, 10 6          |  |
| Smyrna, 8 2                |  |
| Stamboul, 24 16            |  |
| <b>Soda Ash—</b>           |  |
| Trieste, 5 t. 15 c.        |  |
| Lisbon, 30 5               |  |
| Archangel, 1 4             |  |
| <b>Sodium Silicate—</b>    |  |
| Venice, 7 t. 6 c.          |  |
| Valencia, 3 2              |  |
| <b>Sodium Sulphate—</b>    |  |
| St. Petersburg, 10 t. 5 c. |  |
| <b>Superphosphates—</b>    |  |
| Trieste, 9 c.              |  |
| Lisbon, 6 t.               |  |
| <b>Tallow—</b>             |  |
| Hamburg, 12 c.             |  |
| <b>Tar—</b>                |  |
| Archangel, 3 t. 16 c.      |  |
| <b>White Lead—</b>         |  |
| Montreal, 15 t. 7 c.       |  |
| Archangel, 1 2             |  |

**GOOLE.**

Week ending June 17th.

|                                           |  |
|-------------------------------------------|--|
| <b>Benzol—</b>                            |  |
| Boulogne, 47 cks.                         |  |
| Rotterdam, 72                             |  |
| <b>Chemicals (otherwise un escribed)</b>  |  |
| Hamburg, 20 cks.                          |  |
| Harlingen, 1                              |  |
| <b>Coal Products (otherwise undes.)—</b>  |  |
| Antwerp, 7 cks.                           |  |
| Boulogne, 22 1 cs.                        |  |
| Hamburg, 1                                |  |
| Rotterdam, 207                            |  |
| <b>Dyestuffs (otherwise: undescribed)</b> |  |
| Ghent, 51 cs.                             |  |
| Hamburg, 115 bgs.                         |  |
| <b>Manure—</b>                            |  |
| Hamburg, 200 bgs.                         |  |
| <b>Pitch—</b>                             |  |
| Antwerp, 497 t.                           |  |

**GRIMSBY.**

Week ending June 20th.

|                                          |  |
|------------------------------------------|--|
| <b>Alkali—</b>                           |  |
| Hamburg, 10 cs.                          |  |
| <b>Chemicals (otherwise undescribed)</b> |  |
| Hamburg, 1 cs. 37 dms.                   |  |
| <b>Coal Products (otherwise undes.)—</b> |  |
| Dieppe, 116 cks. 2 cs.                   |  |



## PRICES CURRENT.

WEDNESDAY, JUNE 24TH, 1896.

PREPARED BY MESSRS. HIGGINBOTTOM AND CO., 116, PORTLAND STREET, MANCHESTER.

The values stated are F.O.R. at maker's works, or at usual ports of shipment in U.K. The price in different localities may vary.

| Acids:—                                            |                   | £    | s.     | d.  |
|----------------------------------------------------|-------------------|------|--------|-----|
| Acetic, 25 % and 40 %                              | per cwt.          | 6/   | 9/     |     |
| Glacial                                            |                   |      | 10/    |     |
| Arsenic S.G., 2000°                                |                   | 1    | 2      | 0   |
| Fluoric                                            | per lb.           | 0    | 0      | 3½  |
| Muriatic (Tower Salts), 30° Tw.                    | per bottle        | 0    | 0      | 10  |
| (Cylinder), 30° Tw.                                |                   | 0    | 3      | 0   |
| Nitric 80° Tw.                                     | per lb.           | 0    | 0      | 1½  |
| Nitrous                                            |                   | 0    | 0      | 1½  |
| Oxalic                                             | nett              | 0    | 0      | 3½  |
| Phosphoric, 1750°                                  |                   | 0    | 1      | 0   |
| Picric                                             |                   | 0    | 0      | 11  |
| Sulphuric (fuming 50 %)                            | per ton           | 15   | 10     | 0   |
| (monohydrate)                                      |                   | 5    | 10     | 0   |
| (Pyrites, 168°)                                    |                   | 3    | 0      | 0   |
| (free from arsenic, 145°)                          |                   | 1    | 5      | 0   |
| Sulphurous (solution) S.G. 1025                    |                   | 1    | 7      | 6   |
| Tannic (pure)                                      | per lb.           | 0    | 1      | 2½  |
| Tartaric                                           |                   | 0    | 1      | 3   |
| Arsenic, white powdered                            | nett per ton      | 23   | 0      | 0   |
| Alum (loose lump)                                  |                   | 4    | 10     | 0   |
| Alumina Sulphate (pure)                            |                   | 4    | 12     | 6   |
| Aluminoferrous                                     |                   | 2    | 5      | 0   |
| Aluminium                                          | per lb.           | 0    | 2      | 10  |
| Ammonia, Anhydrous                                 |                   | 0    | 1      | 4   |
| " 880=28° B.                                       | per lb.           | 0    | 0      | 2½  |
| " =24° B.                                          |                   | 0    | 0      | 1½  |
| " Carbonate                                        | nett              | 0    | 0      | 3   |
| " Muriate                                          | per ton           | 21   | 15     | 0   |
| " (sal-ammoniac) 1st & 2nd                         | per cwt.          | 37/  | 8      | 35/ |
| " Nitrate                                          | per ton           | 37   | 10     | 0   |
| " Phosphate                                        | per lb.           | 0    | 0      | 6½  |
| " Sulphate (grey) London                           | per ton           | 8    | 2      | 6   |
| " (grey) Hull                                      |                   | 8    | 0      | 0   |
| Aniline Oil (pure)                                 | per lb.           | 0    | 0      | 8½  |
| Aniline Salt                                       |                   | 0    | 0      | 8   |
| Antimony                                           | per ton           | 30   | 5      | 0   |
| " (tartar emetic)                                  | per lb.           | 0    | 0      | 9½  |
| " (golden sulphide)                                |                   | 0    | 0      | 10  |
| Barium Chloride                                    | per ton           | 7    | 0      | 0   |
| " Carbonate (native)                               |                   | 3    | 10     | 0   |
| " Sulphate (native levigated)                      |                   | 42/6 | to 65/ |     |
| Bleaching Powder, 35 %                             | nett              | 6    | 15     | 0   |
| " Liquor, 7 %                                      |                   | 3    | 10     | 0   |
| Bisulphide of Carbon                               |                   | 12   | 0      | 0   |
| Chromium Acetate (crystal)                         | per lb.           | 0    | 0      | 6   |
| Calcium Chloride                                   | per ton           | 2    | 2      | 6   |
| China Clay (at Runcorn) in bulk                    |                   | 15/  | to 30/ |     |
| Coal Tar Products and Dyes:—                       |                   |      |        |     |
| Alizarine (artificial) 20 %                        | nett per lb.      | 0    | 0      | 7   |
| Magenta                                            |                   | 0    | 3      | 9   |
| Anthracene, 30 % A, f.o.b. London                  | per unit per cwt. | 0    | 0      | 11½ |
| Benzol, 90 %                                       | per gallon        | 0    | 2      | 9   |
| 50/90                                              |                   | 0    | 2      | 4½  |
| Carbolic Acid (crystallised 40°)                   | per lb.           | 0    | 0      | 7   |
| (crude 60°)                                        | per gallon        | 0    | 2      | 3   |
| Creosote (ordinary)                                |                   | 0    | 0      | 1   |
| " (filtered for Lucigen light)                     |                   | 0    | 0      | 1½  |
| Crude Naphtha 30 % @ 120° C.                       |                   | 0    | 0      | 10  |
| Grease Oils, 22° Tw.                               | per ton           | 2    | 10     | 0   |
| Pitch, f.o.b. Liverpool or Garston                 |                   | 1    | 12     | 0   |
| Solvent Naphtha, 90 % at 160°                      | per gallon        | 0    | 1      | 4   |
| " Lucigen" and "Wells" Oils                        |                   | 0    | 0      | 2   |
| Copper                                             | per ton           | 48   | 12     | 6   |
| " Sulphate                                         |                   | 17   | 15     | 0   |
| " Oxide (copper scales)                            |                   | 42   | 10     | 0   |
| Glycerine (crude)                                  |                   | 36   | 0      | 0   |
| " (distilled S.G. 1250°)                           |                   | 75   | 0      | 0   |
| Iodine                                             | nett, per oz.     | 0    | 0      | 9   |
| Iron Sulphate (copperas)                           | per ton           | 1    | 7      | 6   |
| " Sulphide (antimony slag)                         |                   | 2    | 0      | 0   |
| Lead (sheet) for cash                              |                   | 12   | 5      | 0   |
| " Litharge Flake (ex ship)                         |                   | 14   | 10     | 0   |
| " Acetate (white)                                  |                   | 21   | 10     | 0   |
| " brown                                            |                   | 15   | 0      | 0   |
| " Carbonate (white lead) pure                      |                   | 16   | 0      | 0   |
| " Nitrate                                          |                   | 19   | 0      | 0   |
| Lime, Acetate (brown) (ex ship)                    | per ton           | 4    | 2      | 6   |
| " (grey) (ex ship)                                 |                   | 7    | 10     | 0   |
| Magnesium (ribbon and wire)                        | per oz.           | 0    | 2      | 1   |
| " Chloride (ex ship)                               | per ton           | 2    | 7      | 6   |
| " Carbonate                                        | per cwt.          | 1    | 17     | 6   |
| " Calcined Magnesia                                | per ton           | 9    | 15     | 0   |
| " Sulphate (Epsom Salts)                           | per ton           | 2    | 15     | 0   |
| Manganese, Sulphate                                |                   | 16   | 10     | 0   |
| " Borate                                           | per cwt.          | 2    | 15     | 0   |
| " Ore, 70 %                                        | per ton           | 3    | 15     | 0   |
| Methylated Spirit, 61° O.P.                        | per gallon        | 0    | 1      | 8   |
| Naphtha (Wood), Solvent                            |                   | 0    | 3      | 0   |
| " Miscible, 60° O.P.                               |                   | 0    | 3      | 1½  |
| Oils:—                                             |                   |      |        |     |
| Cotton-seed                                        | per ton           | 17   | 0      | 0   |
| Linseed                                            |                   | 19   | 10     | 0   |
| Petroleum, American                                | per gallon        | 0    | 0      | 6½  |
| Stearine                                           | per ton           | 21   | 15     | 0   |
| Phosphorus (yellow)                                | per lb.           | 0    | 2      | 2   |
| (red)                                              |                   | 0    | 2      | 8   |
| Potassium (metal)                                  | per oz.           | 0    | 3      | 7   |
| " Bichromate                                       | nett per lb.      | 0    | 0      | 4½  |
| " Carbonate, 90 % (ex ship)                        | per ton           | 17   | 10     | 0   |
| " Chlorate                                         | per lb.           | 0    | 0      | 4½  |
| " Cyanide, 98 %                                    |                   | 0    | 1      | 2   |
| " Hydrate (Caustic Potash) 90 %                    | per ton           | 74   | 10     | 0   |
| " (Caustic Potash) 75/80 %                         |                   | 20   | 10     | 0   |
| " (Caustic Potash) 70/75 %                         |                   | 19   | 10     | 0   |
| " Nitrate (refined)                                | per cwt.          | 1    | 1      | 6   |
| " Permanganate                                     | per cwt.          | 3    | 7      | 6   |
| " Prussiate Yellow                                 | per lb.           | 0    | 0      | 7   |
| " Sulphate, 90 % (ex ship)                         | per ton           | 9    | 15     | 0   |
| " Muriate, 80 % (do.)                              |                   | 8    | 10     | 0   |
| Silver (metal)                                     | per oz.           | 0    | 2      | 7½  |
| Sodium (metal)                                     | per lb.           | 0    | 2      | 11  |
| " Carb. (refined Soda-ash) 48 %                    | nett per ton      | 4    | 15     | 0   |
| " (Caustic Soda-ash) 48 %                          |                   | 4    | 5      | 0   |
| " (Carb. Soda-ash) 48 %                            |                   | 4    | 0      | 0   |
| " (Alkali) 58 %                                    |                   | 3    | 15     | 0   |
| " (Soda Crystals)                                  |                   | 2    | 0      | 0   |
| " Acetate (ex-ship)                                |                   | 14   | 7      | 6   |
| " Arseniate, 45 %                                  |                   | 15   | 0      | 0   |
| " Chlorate                                         | per lb.           | 0    | 0      | 6   |
| " Borate (Borax)                                   | nett, per ton     | 20   | 0      | 0   |
| " Bichromate                                       | per lb.           | 0    | 0      | 3½  |
| " Hydrate (77 % Caustic Soda) (f.o.b.) net pr. ton |                   | 9    | 7      | 6   |
| " (74 % Caustic Soda)                              |                   | 8    | 7      | 6   |
| " (70 % Caustic Soda)                              |                   | 7    | 7      | 6   |
| " (60 % Caustic Soda)                              |                   | 6    | 7      | 6   |
| " (pure liquor 90° Tw.)                            |                   | 4    | 0      | 0   |
| " 77/78 % powdered (99 % hydrate)                  |                   | 13   | 10     | 0   |
| " Bicarbonate                                      |                   | 6    | 10     | 0   |
| " Hyposulphite                                     |                   | 5    | 10     | 0   |
| " Manganate, 25 %                                  |                   | 15   | 0      | 0   |
| " Nitrate (95 %) ex-ship Liverpool                 | per cwt.          | 0    | 7      | 10½ |
| " Nitrite, 98 %                                    | per ton           | 30   | 0      | 0   |
| " Phosphate                                        |                   | 12   | 15     | 0   |
| " Silicate (glass)                                 | per ton           | 4    | 10     | 0   |
| " (liquid, 100° Tw.)                               |                   | 3    | 10     | 0   |
| " Stannate, 40 %                                   | per cwt.          | 3    | 2      | 9   |
| " Sulphate (Salt-cake)                             | per ton           | 1    | 6      | 0   |
| " (Glauber's Salts)                                |                   | 1    | 10     | 0   |
| " Sulphide                                         |                   | 6    | 15     | 0   |
| " Sulphite                                         |                   | 5    | 15     | 0   |
| Strontium Hydrate, 100 %                           |                   | 8    | 0      | 0   |
| Sulphocyanide Ammonium, 95 %                       | per lb.           | 0    | 0      | 6½  |
| " Barium, 95 %                                     |                   | 0    | 0      | 4½  |
| " Potassium                                        |                   | 0    | 0      | 7   |
| Sulphur (Flowers)                                  | per ton           | 6    | 5      | 0   |
| " (Roll Brimstone)                                 |                   | 5    | 10     | 0   |
| " Brimstone: Best Quality                          |                   | 3    | 17     | 6   |
| Superphosphate of Lime (26 %)                      |                   | 2    | 17     | 6   |
| Tallow                                             |                   | 19   | 10     | 0   |
| Tin Crystals                                       | per lb.           | 0    | 0      | 5   |
| " English Ingots                                   | per ton           | 65   | 0      | 0   |
| Zinc (Spelter)                                     |                   | 18   | 7      | 6   |
| " Chloride (solution, 100° Tw.)                    |                   | 5    | 2      | 8   |



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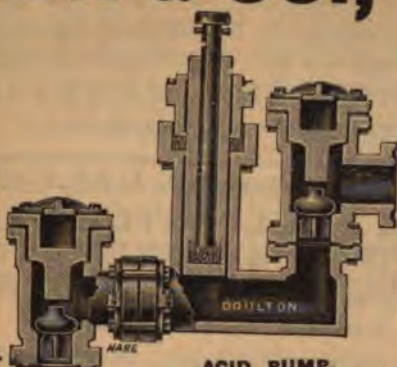




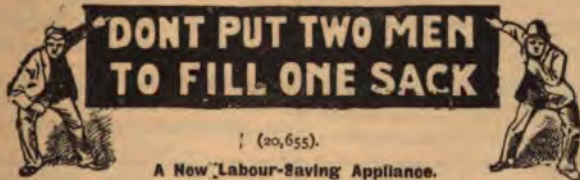






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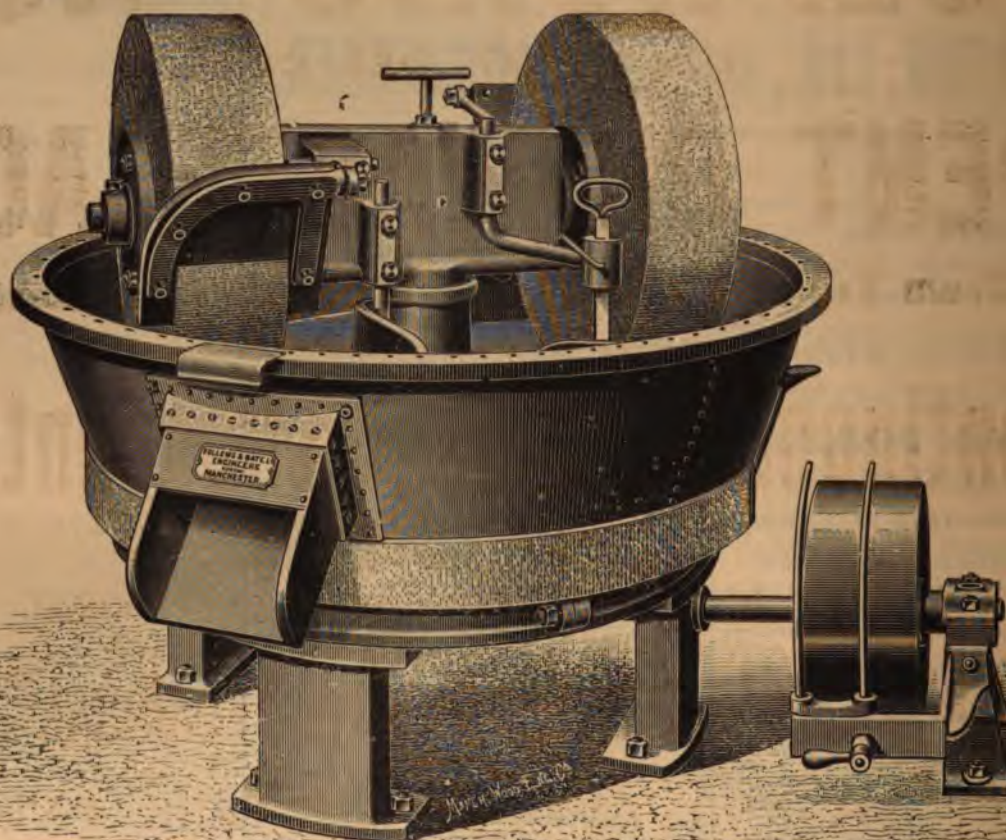


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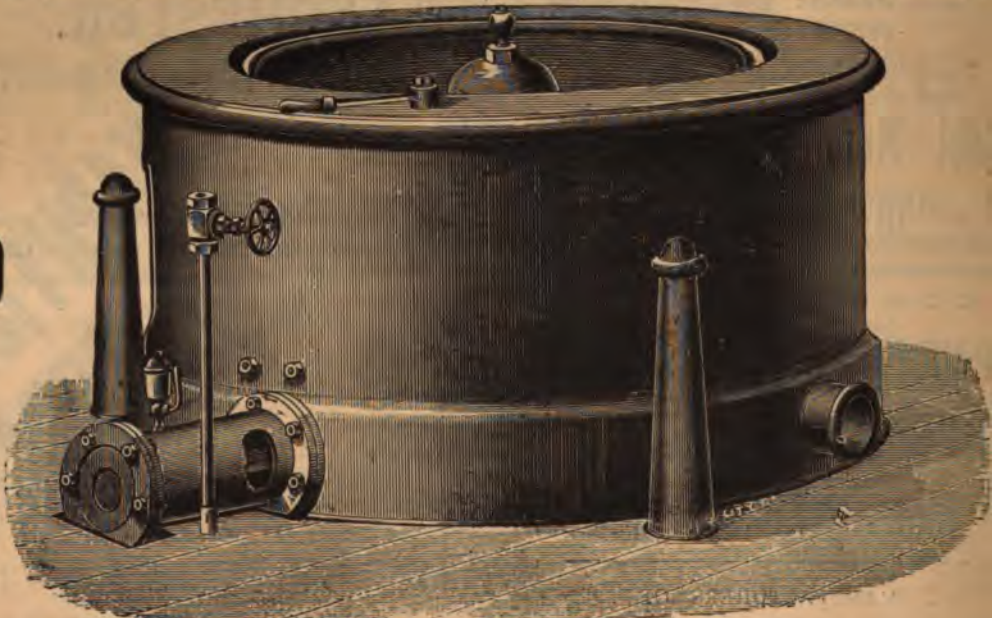
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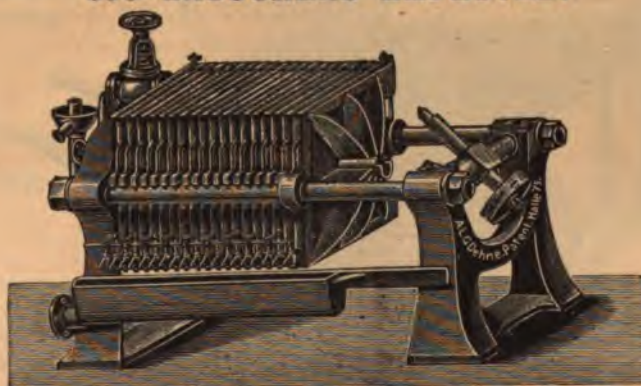
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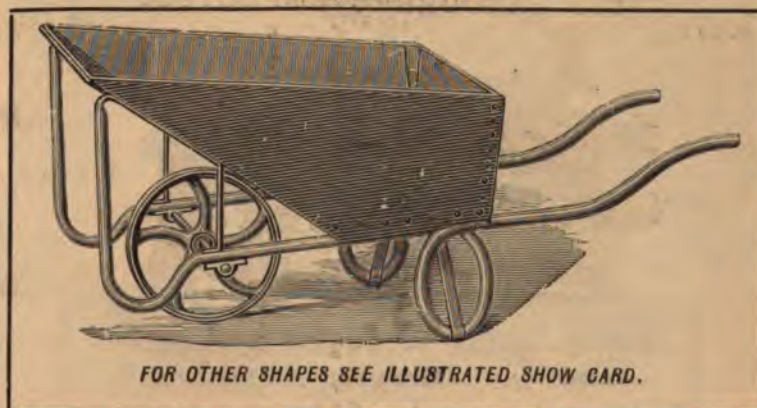
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